

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: John Chu Examiner #: 68314 Date: 4/29/04
 Art Unit: 1752 Phone Number 305-571-272-1324 Serial Number: 10/005,796
 Mail Box and Bldg/Room Location: Ren 9d-51 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species of structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Polybenzoxazole Precursor, Photoresist Solution, Polybenzoxazole

Inventors (please provide full names): Hausmann, Jörg ; Mayer, Gerhard ; Schmidt, Ginter ; Sezsi, Recai

Earliest Priority Filing Date: 3/9/01

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

- Please search the polymer below (attached)
- Inventive step in the variable "T" defined as formulae 5, 6, 7, 8, 9 and 15 - 3.4. (~~1-10~~)
- Also search use of polybenzoxazole in a photoresist solution / composition with a diazoketone (see claim 7)

Thank You
John Chu

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:		NA Sequence (#)	STN
Searcher Phone #:		AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	Questel/Orbit
Date Searcher Picked Up:		Bibliographic	Dr.Link
Date Completed:		Litigation	Lexis/Nexis
Searcher Prep & Review Time:		Fulltext	Sequence Systems
Clerical Prep Time:		Patent Family	WWW/Internet
Online Time:		Other	Other (specify)

=> file reg

FILE 'REGISTRY' ENTERED AT 16:16:37 ON 03 MAY 2004
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Property values tagged with IC are from the ZIC/VINITI data file
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STRUCTURE FILE UPDATES: 30 APR 2004 HIGHEST RN 678535-01-8
DICTIONARY FILE UPDATES: 30 APR 2004 HIGHEST RN 678535-01-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> file caplus

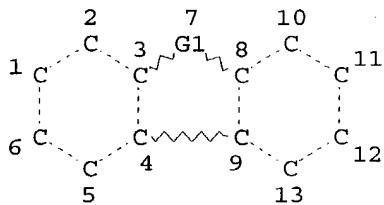
FILE 'CAPLUS' ENTERED AT 16:16:40 ON 03 MAY 2004
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FILE COVERS 1907 - 3 May 2004 VOL 140 ISS 19
FILE LAST UPDATED: 2 May 2004 (20040502/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

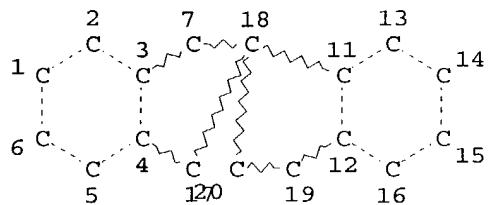
=> d que
L95 STR



VAR G1=C/N/O
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 13

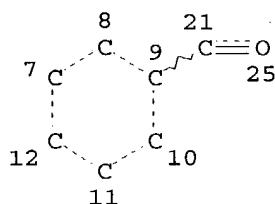
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L98 STR



NODE ATTRIBUTES:
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STEREO ATTRIBUTES: NONE
L112 STR

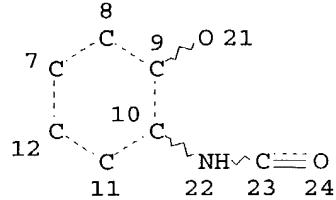


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DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE
L113 STR



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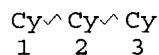
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NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L115 802 SEA FILE=REGISTRY SSS FUL L112 AND L113 AND (L98 OR L95)
L116 444 SEA FILE=CAPLUS ABB=ON PLU=ON L115
L121 5 SEA FILE=CAPLUS ABB=ON PLU=ON L116 AND (PHOTORESIST? OR
?RESIST?) (5A) (SOLUTION OR LIQUID OR FLUID OR AQUEOUS OR AQ OR
COMPOS?)
L123 12 SEA FILE=CAPLUS ABB=ON PLU=ON POLYBENZOXAZOLE? AND L116
L124 28 SEA FILE=CAPLUS ABB=ON PLU=ON SEMICONDUCT? AND L116
L125 38 SEA FILE=CAPLUS ABB=ON PLU=ON L121 OR (L123 OR L124)
L144 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L145 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
GGCAT IS PCY AT 1
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 1

STEREO ATTRIBUTES: NONE

L146 SCR 1842

L148 5639 SEA FILE=REGISTRY SSS FUL L112 AND L113 AND (L144 OR L145) AND
L146

L149 2771 SEA FILE=CAPLUS ABB=ON PLU=ON L148

L150 49 SEA FILE=CAPLUS ABB=ON PLU=ON L149 AND (PHOTORESIST? OR
RESIST?) (5A) (SOLUTION OR FLUID OR LIQUID OR AQUEOUS OR AQ OR
COMPOS?)

L151 13 SEA FILE=CAPLUS ABB=ON PLU=ON L150 AND POLYBENZOXAZOLE?

L152 21 SEA FILE=CAPLUS ABB=ON PLU=ON L150 AND SEMICONDUCT?

L153 26 SEA FILE=CAPLUS ABB=ON PLU=ON L151 OR L152

L154 62 SEA FILE=CAPLUS ABB=ON PLU=ON L125 OR L153

=> d ti 1-62 1154

L154 ANSWER 1 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Positive photoimaging precursor compositions with high resolution and
sensitivity, and **semiconductor** electric components and organic
electroluminescence devices using them

L154 ANSWER 2 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI **Polybenzoxazoles** with low elastic modulus, their precursors, and
optical waveguides using them

L154 ANSWER 3 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Positive-working photosensitive heat-**resistant** resin precursor
compositions for **semiconductor** devices

L154 ANSWER 4 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Heat-**resistant** resin precursor **compositions** and
semiconductor devices therewith

L154 ANSWER 5 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Photosensitive heat **resistant** resin precursor
composition

L154 ANSWER 6 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Polymer **compositions** with excellent **resistance** to
oxidative decomposition and organic electroluminescent elements using them
as insulating layers

L154 ANSWER 7 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Photosensitive resin **composition** and method for preparing heat-
resistant resin film

L154 ANSWER 8 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Plastic optical waveguide material

L154 ANSWER 9 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Polyamide-based varnish compositions for **semiconductor** device
insulating microporous films

L154 ANSWER 10 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive-working photosensitive resin compositions containing polyimide or polyoxazole precursors, pattern formation using them, and electronic devices having the pattern

L154 ANSWER 11 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Porous **polybenzoxazole** films having extremely low permittivity, their preparation, and their use in **semiconductor** devices

L154 ANSWER 12 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Heat-resistant **polybenzoxazole** precursors with excellent moldability, **polybenzoxazoles**, and dielectric materials and **semiconductor** devices using them

L154 ANSWER 13 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI High-temperature-**resistant** deep-UV-sensitive **photoresist composition** for forming dielectric or buffer layer in microelectronics

L154 ANSWER 14 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI High-temperature-**resistant** **photoresist composition** for forming dielectric or buffer layer in microelectronics

L154 ANSWER 15 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Polybenzoxazole** precursors, their condensed crosslinked **polybenzoxazoles**, insulating films, and **semiconductor** devices

L154 ANSWER 16 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance

L154 ANSWER 17 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Materials for organic insulating films and organic insulating films having low dielectric constants and good heat resistance

L154 ANSWER 18 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Composition and process for the production of a porous layer on substrates using the composition

L154 ANSWER 19 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides

L154 ANSWER 20 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Positive-working **photoresist** polyimide precursor resin **composition**

L154 ANSWER 21 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Epoxy resin compositions with low water absorption, dielectric constant, and good solder-heat resistance and prepgs using them

L154 ANSWER 22 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Precursor composition for positive photosensitive resin suitable for fabricating display

L154 ANSWER 23 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Alkali-developable positive-working photosensitive resin precursor compositions

L154 ANSWER 24 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Fluorenediamine-derived polyamide, positively-working photosensitive polyamide composition, and **semiconductor** device using the composition

L154 ANSWER 25 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Heat-**resistant** resin **compositions** useful for **semiconductor** devices with good adhesion and low absorbance

L154 ANSWER 26 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Polyamide compositions and their dielectric films with excellent heat resistance and water absorption

L154 ANSWER 27 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Synthesis and properties of novel cardo aromatic poly(ether-benzoxazole)s

L154 ANSWER 28 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Positive-working photosensitive polyamide compositions having high sensitivity and **semiconductor** devices fabricated by using the same

L154 ANSWER 29 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI **Polybenzoxazole** precursors, **polybenzoxazoles**, and **photoresist** **solutions** containing the precursors

L154 ANSWER 30 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Positive-working photosensitive resin precursor composition

L154 ANSWER 31 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Heat-**resistant** resin **compositions** with improved adhesion with substrates

L154 ANSWER 32 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Heating of patterned heat-**resistant** resin **composition** film

L154 ANSWER 33 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Positive-working photosensitive resin precursor composition

L154 ANSWER 34 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Photosensitive resin precursor composition

L154 ANSWER 35 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Alkaline-developable photosensitive heat-**resistant** polymer precursor **composition**

L154 ANSWER 36 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

TI Positive photosensitive composition, positive photosensitive lithographic

plate and method for forming positive image

L154 ANSWER 37 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Photosensitive heat-resistant resin precursor
composition

L154 ANSWER 38 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Composition of photosensitive polyimide precursor

L154 ANSWER 39 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Manufacture of LSI circuit using water-soluble positive-working
photoresist composition

L154 ANSWER 40 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Preparation of **polybenzoxazoles**, polybenzimidazoles, and
polybenzothiazoles

L154 ANSWER 41 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic imaging method

L154 ANSWER 42 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Optical information copying media

L154 ANSWER 43 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photoreceptors using bisazo pigment as
charge-generating agent

L154 ANSWER 44 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photoreceptors containing a bisazo pigment as a
charge-generating agent

L154 ANSWER 45 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photoreceptors containing bisazo pigments

L154 ANSWER 46 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photoreceptor for **semiconductor** laser
containing fluorenebisazo derivatives as charge-generating substance

L154 ANSWER 47 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Bisazo dye-containing electrophotographic photoreceptor

L154 ANSWER 48 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photoreceptors

L154 ANSWER 49 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Sensitive materials in electrophotography

L154 ANSWER 50 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photoreceptors

L154 ANSWER 51 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 52 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 53 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic plates

L154 ANSWER 54 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Composite electrophotographic photosensitive materials

L154 ANSWER 55 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 56 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 57 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 58 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 59 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 60 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photosensitive materials

L154 ANSWER 61 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Trisazo benzocarbazole compounds for electrophotography

L154 ANSWER 62 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
TI Multilayer electrophotographic plates

=> d ibib abs hitstr ind total 1154

L154 ANSWER 1 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:219168 CAPLUS
DOCUMENT NUMBER: 140:278413
TITLE: Positive photoimaging precursor compositions with high resolution and sensitivity, and **semiconductor** electric components and organic electroluminescence devices using them
INVENTOR(S): Suwa, Atsushi; Fujita, Yoji; Tomikawa, Masao
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 37 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004085622	'A2	20040318	JP 2002-242586	20020822
PRIORITY APPLN. INFO.:			JP 2002-242586	20020822
AB	The compns. comprise (A) alkali-soluble heat- resistant			

resin precursors (e.g. polyamic acids), (B) heat-polymerizable compds. having phenolic OH and ethylenically unsatd. groups $(CH_2)_aCR_3:CR_1R_2$ ($R_1-3 = H, C_1-20$ -alkyl, phenoxy; $a = 0-5$) and/or those having acetylenically unsatd. groups $(CH_2)_aC\equiv C.R_1$ ($R_1, a = \text{same as above}$), and (C) quinonediazide esters.

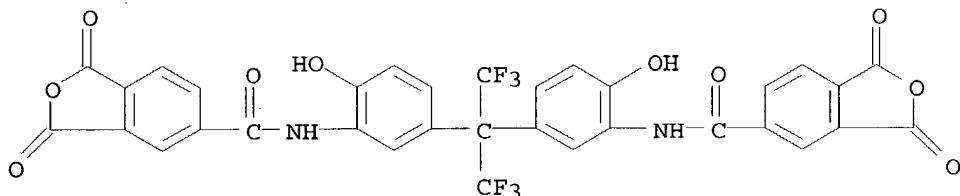
IT 223255-30-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-037

ICS C08F012-34; C08F038-00; C08G069-26; G03F007-025; G03F007-027; G03F007-40; H01L021-027

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

ST pos photoimaging compn polyamic acid sensitivity; org electroluminescence device polyimide pos photoimaging; **semiconductor** device acetylenyl ethenyl photoimaging insulator

IT Electroluminescent devices

(displays; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Luminescent screens

(electroluminescent; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamic acid-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polysiloxanes, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamic acid-polyether-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Fluoropolymers, preparation

Polysiloxanes, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid-polyether-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Fluoropolymers, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid-polyether-polysiloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polysiloxanes, preparation

Polysulfones, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid-polyketone-polysulfone-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid-polysiloxane-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyketones

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid-polysiloxane-polysulfone-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid-siloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyimides, preparation

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyamic acids

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polysiloxanes, preparation

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-polyimide-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Fluoropolymers, preparation
Polysiloxanes, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-polyimide-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Fluoropolymers, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-polyimide-siloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyamic acids
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-polysiloxane-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyamic acids
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-polysiloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyimides, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-siloxane-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyimides, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-siloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyethers, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyimide-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polysiloxanes, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyimide-polyketone-polysulfone-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polysulfones, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyimide-polyketone-siloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyketones
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyimide-polysulfone-siloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyethers, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyimide-siloxane-, fluorine-containing; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyethers, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyimide-siloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyamic acids
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyketone-polysiloxane-polysulfone-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyimides, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyketone-polysulfone-siloxane-; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Electric insulators
Photoimaging materials
Semiconductor devices
(pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyimides, preparation
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT Polyamic acids
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

IT 112770-95-3
RL: TEM (Technical or engineered material use); USES (Uses) (DAL-BPZ; pos. photoimaging polyamic acid compns. with high resolution and sensitivity for **semiconductor** devices and organic EL displays)

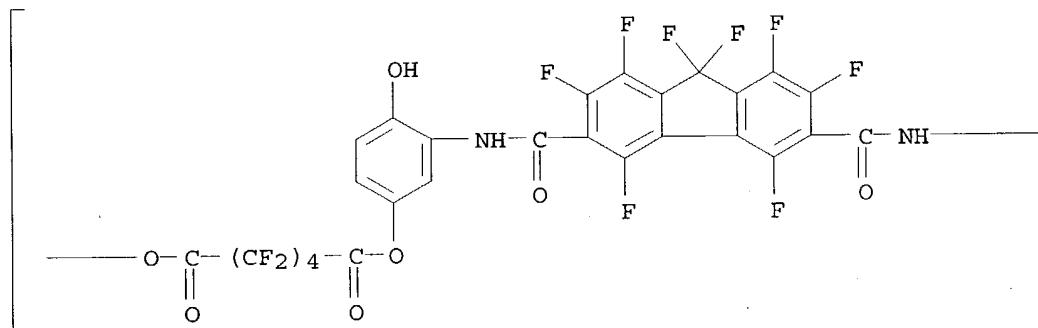
IT 108-31-6DP, Maleic anhydride, reaction products with polyamic acids 151402-72-1DP, aminophenol-terminated 281653-60-9P 433264-94-9DP, maleic anhydride-terminated
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (pos. photoimaging polyamic acid compns. with high resolution and

sensitivity for **semiconductor** devices and organic EL displays)
IT 25596-69-4P 27431-43-2P 33798-02-6P 129197-38-2P 157445-87-9P
223255-30-9P 672294-83-6P 672310-56-4P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(pos. photoimaging polyamic acid compns. with high resolution and
sensitivity for **semiconductor** devices and organic EL displays)
IT 591-27-5DP, 3-Aminophenol, reaction products with polyamic acids
672294-81-4P 672294-85-8P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoimaging polyamic acid compns. with high resolution and
sensitivity for **semiconductor** devices and organic EL displays)
IT 79-94-7 80-05-7, Bisphenol A, reactions 99-57-0, 2-Amino-4-nitrophenol
99-63-8, Isophthaloyl chloride 106-95-6, Allyl bromide, reactions
122-04-3, 4-Nitrobenzoyl chloride 1066-54-2, Trimethylsilylacetylene
1107-00-2, 2,2-Bis(3,4-dicarboxyphenyl)hexafluoropropane dianhydride
1204-28-0, Trimellitic anhydride chloride 2421-28-5,
3,3',4,4'-Benzophenonetetracarboxylic dianhydride 3770-97-6
27955-94-8, TrisP HAP 35512-24-4, BIR-PTBP 36451-09-9 57138-54-2
83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(pos. photoimaging polyamic acid compns. with high resolution and
sensitivity for **semiconductor** devices and organic EL displays)
IT 110726-28-8, TrisP PA 151319-83-4, BisRS 2P
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(pos. photoimaging polyamic acid compns. with high resolution and
sensitivity for **semiconductor** devices and organic EL displays)
IT 843-55-0, Bis-Z 1745-89-7, DAL-BPA 2768-02-7, Vinyltrimethoxysilane
4286-23-1, p-Hydroxy- α -methylstyrene
RL: TEM (Technical or engineered material use); USES (Uses)
(pos. photoimaging polyamic acid compns. with high resolution and
sensitivity for **semiconductor** devices and organic EL displays)
IT 38595-90-3P 151598-18-4P 383189-33-1P 672307-21-0P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
USES (Uses)
(sensitizing agent; pos. photoimaging polyamic acid compns. with high
resolution and sensitivity for **semiconductor** devices and organic EL
displays)

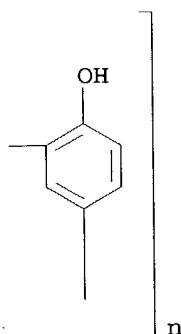
L154 ANSWER 2 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:159428 CAPLUS
DOCUMENT NUMBER: 140:200659
TITLE: **Polybenzoxazoles** with low elastic modulus,
their precursors, and optical waveguides using them
INVENTOR(S): Tominaga, Yumiko
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE						
JP 2004059761	A2	20040226	JP 2002-220848	20020730						
PRIORITY APPLN. INFO.:			JP 2002-220848	20020730						
AB The precursors comprise $[CONHY(OR1)(OR2)NHCOX]_n$ [$n = 2-1000$; $X = C_6H_4O_2C(CF_2)_iCO_2C_6H_4$, divalent organic group; $Y = C_6H_3O_2C(CF_2)_iCO_2C_6H_3$, tetravalent organic group; X and/or $Y =$ the diester group; $R1, R2 = H$, monovalent organic group; $i = 1-10$]. Thus, bis(4-amino-3-hydroxyphenyl) perfluoropentanedioate was polymerized with isophthaloyl chloride to give a polybenzoxazole precursor, which was applied on a glass plate and heated to give a polybenzoxazole film showing relative permittivity 2.3, 5% weight loss temperature 532°, elastic modulus 3 GPa, and water absorption 0.1%. Optical waveguides showing low optical loss were manufactured using the polybenzoxazoles as clad and core layers.										
IT 660832-81-5P 660833-04-5P	RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)				(manufacture of polybenzoxazoles with low elastic modulus, their precursors, and optical waveguides using them)					
RN 660832-81-5 CAPLUS										
CN Poly[oxy(2,2,3,3,4,4,5,5-octafluoro-1,6-dioxo-1,6-hexanediy)oxy(4-hydroxy-1,3-phenylene)iminocarbonyl(1,2,4,5,7,8,9,9-octafluoro-9H-fluorene-3,6-diyl)carbonylimino(6-hydroxy-1,3-phenylene)] (9CI) (CA INDEX NAME)										

PAGE 1-A



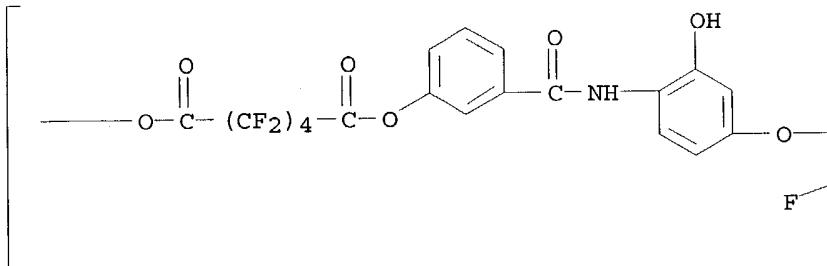
PAGE 1-B



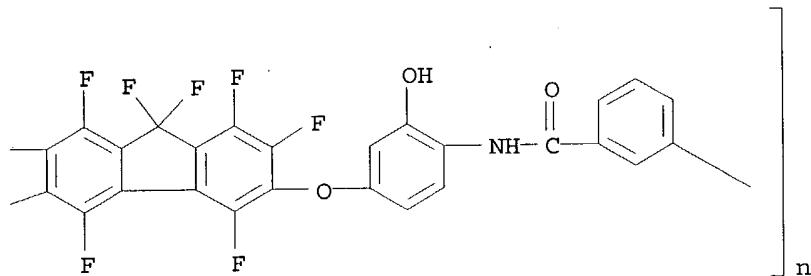
RN 660833-04-5 CAPLUS

CN Poly[oxy(2,2,3,3,4,4,5,5-octafluoro-1,6-dioxo-1,6-hexanediy)oxy-1,3-phenylene carbonylimino(2-hydroxy-1,4-phenylene)oxy(1,3,4,5,7,8,9,9-octafluoro-9H-fluorene-2,6-diyl)oxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,3-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C08G073-22

ICS G02B006-12

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 73

ST **polybenzoxazole** low elastic modulus optical waveguide; fluoro **polybenzoxazole** precursor optical waveguide

IT Polyesters, uses

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**Polybenzoxazole-polyether**-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Optical waveguides

(manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Polyesters, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(**Polyamide**-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using

them)

IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyester-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyester-; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyester-polyether-; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Polyesters, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyether-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Polyesters, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole**-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Polyethers, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole-polyester**-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole-polyester**-; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole-polyester-polyether**-; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polyester**-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT Polyamides, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyester-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyester-polyether-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT **Polyamides, preparation**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyester-polyether-, fluorine-containing; manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

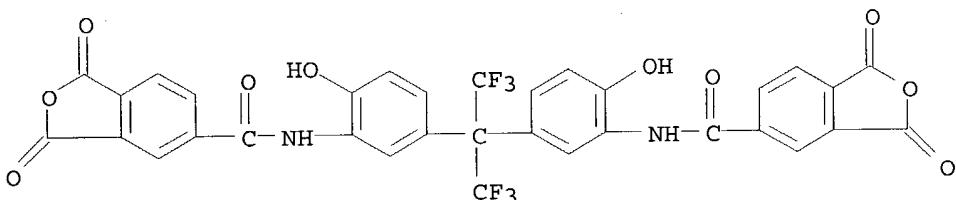
IT 660832-49-5P 660832-52-0P 660832-55-3P 660832-59-7P 660832-62-2P
660832-66-6P 660832-75-7P 660832-80-4P 660832-83-7P 660832-85-9P
660832-89-3P 660832-93-9P 660832-94-0P 660832-99-5P 660833-02-3P
660833-03-4P 660833-06-7P
RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT 660832-51-9P 660832-54-2P 660832-57-5P 660832-61-1P 660832-64-4P
660832-72-4P 660832-82-6P 660832-87-1P 660832-91-7P 660832-96-2P
660833-01-2P 660833-05-6P 660833-08-9P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

IT 660832-50-8P 660832-53-1P 660832-56-4P 660832-60-0P 660832-63-3P
660832-69-9P **660832-81-5P** 660832-86-0P 660832-90-6P
660832-95-1P 660833-00-1P **660833-04-5P** 660833-07-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(manufacture of **polybenzoxazoles** with low elastic modulus, their precursors, and optical waveguides using them)

L154 ANSWER 3 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:118389 CAPLUS
DOCUMENT NUMBER: 140:147419
TITLE: Positive-working photosensitive heat-resistant resin precursor compositions for **semiconductor** devices
INVENTOR(S): Yumiba, Tomoyuki; Suwa, Atsushi; Tomikawa, Masao
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

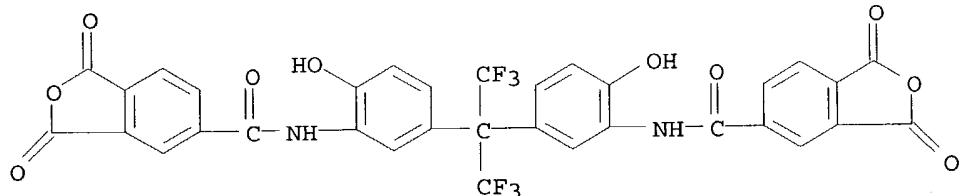
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004045477	A2	20040212	JP 2002-199583	20020709
PRIORITY APPLN. INFO.:			JP 2002-199583	20020709
OTHER SOURCE(S): MARPAT 140:147419				
AB	The compns. with improved adhesion to substrates after heat-curing for interlayer insulator films and surface protection films of semiconductor devices, contain (A) polymers having main units $[COR_1(OH)p(CO_2R_3)nCONHR_2(OH)q(CO_2R_4)oNH]_m$ ($R_1, R_2 = 2-8$ valent $C \geq 2$ organic residue; $R_3, R_4 = H$, alkali metal ion, ammonium ion, C_{1-20} organic residue; $m = 3-100,000$; $n, o = 0-2$; $p, q = 0-4$; $n + q > 0$) and (B) compds. represented by $R_5R_6C:N(CH_2)a(SiR_{11}R_{12}O)bSiR_{13}R_{14}R_{15}$ or $R_7R_8C:N(CH_2)c(SiR_{16}R_{17}O)dSiR_{18}R_{19}(CH_2)eN:CR_9R_{10}$ ($R_5-R_{10} = C \geq 1$ organic residue; $R_{11}-R_{19} = C_{1-6}$ hydrocarbyl, C_{1-6} alkoxy; at least one of $R_{11}-R_{15}$ and one of $R_{16}-R_{19} = C_{1-6}$ alkoxy). Thus, a varnish containing polyamic acid [prepared from 4,4'-diaminodiphenyl ether, 1,3-bis(3-aminopropyl)tetramethyldisiloxane, pyromellitic anhydride, and 3,3',4,4'-benzophenonetetracarboxylic acid dianhydride] and 3-triethoxysilyl-N-(1,3-dimethylbutylidene)propylamine was applied on a Si wafer and heated to give a polyimide film showing high adhesion after pressure cooker test.			
IT	223255-30-9P			
RL	IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)			
(pos.-working photosensitive heat- resistant resin precursor compns. containing aminoalkoxysilanes for semiconductor device insulator and protection films)				
RN	223255-30-9 CAPPLUS			
CN	5-Isobenzofurancarboxamide, N,N' -[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)			



IT	261373-47-1P 652968-59-7P			
RL	IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)			
(pos.-working photosensitive heat- resistant resin precursor compns. containing aminoalkoxysilanes for semiconductor device insulator and protection films)				
RN	261373-47-1 CAPPLUS			
CN	5-Isobenzofurancarboxamide, N,N' -[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)			

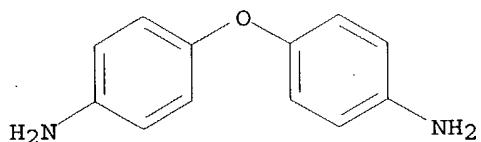
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



CM 2

CRN 101-80-4
CMF C12 H12 N2 O

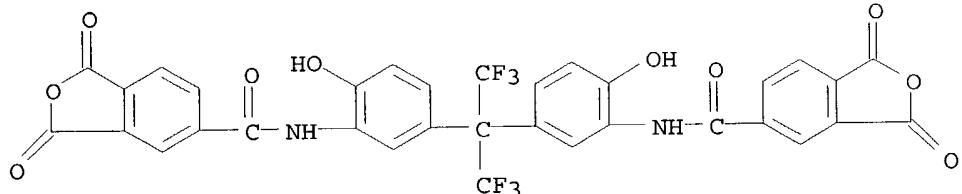


RN 652968-59-7 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 3-aminophenol and 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

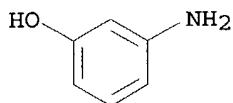
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



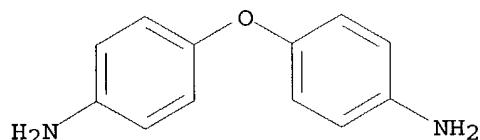
CM 2

CRN 591-27-5
CMF C6 H7 N O



CM 3

CRN 101-80-4
CMF C12 H12 N2 O



IC ICM G03F007-037
ICS G03F007-075; G03F007-085; H01L021-027
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 74, 76
ST heat resistance pos photopolymer precursor **semiconductor** device;
insulator polyimide precursor polyamic acid aminoalkoxysilane blend;
triethoxysilyldimethylbutylidenepropylamine polyamic acid blend polyimide
film
IT Heat-resistant materials
(films; pos.-working photosensitive heat-**resistant** resin
precursor **compns.** containing aminoalkoxysilanes for
semiconductor device insulator and protection films)
IT Polyamides, uses
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
(fluorine-containing, hydroxy-containing; pos.-working photosensitive heat-**resistant** resin precursor **compns.** containing
aminoalkoxysilanes for **semiconductor** device insulator and
protection films)
IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(fluorine-containing; pos.-working photosensitive heat-**resistant**
resin precursor **compns.** containing aminoalkoxysilanes for
semiconductor device insulator and protection films)
IT Films
(heat-resistant; pos.-working photosensitive heat-**resistant**
resin precursor **compns.** containing aminoalkoxysilanes for
semiconductor device insulator and protection films)
IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or reagent);

USES (Uses)
(polyamide-, hydroxy-containing; pos.-working photosensitive heat-resistant resin precursor compns. containing aminoalkoxysilanes for **semiconductor** device insulator and protection films)

IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-; pos.-working photosensitive heat-resistant resin precursor compns. containing aminoalkoxysilanes for **semiconductor** device insulator and protection films)

IT Dielectric films
Photoimaging materials
Semiconductor devices
(pos.-working photosensitive heat-resistant resin precursor compns. containing aminoalkoxysilanes for **semiconductor** device insulator and protection films)

IT Polyamic acids
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(pos.-working photosensitive heat-resistant resin precursor compns. containing aminoalkoxysilanes for **semiconductor** device insulator and protection films)

IT Polyimides, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working photosensitive heat-resistant resin precursor compns. containing aminoalkoxysilanes for **semiconductor** device insulator and protection films)

IT 85342-62-7, NAI 105 119666-27-2 172491-61-1, 4NT 300
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; pos.-working photosensitive heat-resistant resin precursor compns. containing aminoalkoxysilanes for **semiconductor** device insulator and protection films)

IT 129708-71-0P 201356-47-0P 213608-87-8P, 3,3',4,4'-Diphenyl ether tetracarboxylic acid dibutyl ester 220426-92-6P 223255-30-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(pos.-working photosensitive heat-resistant resin precursor compns. containing aminoalkoxysilanes for **semiconductor** device insulator and protection films)

IT 84329-58-8P, 3,3',4,4'-Benzophenonetetracarboxylic acid dianhydride-1,3-bis(3-aminopropyl)tetramethyldisiloxane-4,4'-diaminodiphenyl ether-pyromellitic anhydride copolymer 232258-55-8P, 3,5-Diaminobenzoic acid-4,4'-diaminodiphenyl ether-3,3',4,4'-diphenyl ether tetracarboxylic acid dibutyl ester dichloride copolymer 261373-47-1P 652968-56-4P 652968-57-5P 652968-58-6P 652968-59-7P 652968-60-0P
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(pos.-working photosensitive heat-resistant resin precursor

compns. containing aminoalkoxysilanes for **semiconductor**
device insulator and protection films)

IT 347147-75-5P 645385-91-7P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working photosensitive heat-**resistant** resin precursor
compns. containing aminoalkoxysilanes for **semiconductor**
device insulator and protection films)

IT 116229-43-7, 3-Triethoxysilyl-N-(1,3-dimethylbutylidene)propylamine
652968-55-3
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(pos.-working photosensitive heat-**resistant** resin precursor
compns. containing aminoalkoxysilanes for **semiconductor**
device insulator and protection films)

IT 71-36-3, n-Butyl alcohol, reactions 121-90-4, 3-Nitrobenzoyl chloride
1204-28-0, Trimellitic anhydride chloride 1823-59-2, 3,3',4,4'-Diphenyl
ether tetracarboxylic dianhydride 7719-09-7, Thionyl chloride
24424-99-5, Tert-Butyl dicarbonate 83558-87-6, 2,2-Bis(3-amino-4-
hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(pos.-working photosensitive heat-**resistant** resin precursor
compns. containing aminoalkoxysilanes for **semiconductor**
device insulator and protection films)

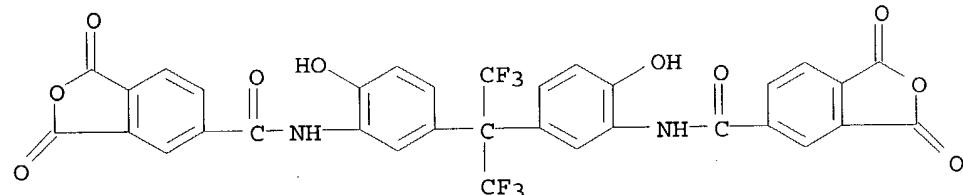
L154 ANSWER 4 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:118071 CAPLUS
DOCUMENT NUMBER: 140:165070
TITLE: Heat-**resistant** resin precursor
compositions and **semiconductor**
devices therewith
INVENTOR(S): Yumiba, Tomoyuki; Minamihashi, Katsuya; Tomikawa,
Masao
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004043779	A2	20040212	JP 2003-119531	20030424
PRIORITY APPLN. INFO.:			JP 2002-126061	A 20020426
AB Title compns. comprise (A) polymers having repeating units [COR1(OH) _p (COOR3) _n CONHR2(OH) _q (COOR4) _o NH] _m as main components and (B) compds. (Z1)aR5(Z2)b, wherein R1, R2 = divalent-octavalent organic groups containing ≥ 2 carbon atoms; R3, R4 = H, alkali metal ion, ammonium ion, or C1-20 organic group; R5 = structure containing ≥ 2 carbon atoms; m = 3-100,000 integer; n, o = 0-2 integer; p, q = 0-4 integer (p + q > 0); Z1 = ≥ 1 structure selected from NR6R7, N:CR8R9, NR10C(:O)R11, or NHCOR12OH; Z2 = ≥ 1 structure selected from NR6R7, N:CR8R9, NR10C(:O)R11, NHCOR12OH, vinyl, ethenyl, mercapto, or hydroxy group; R6, R7, R8, R9, R10 = H or C1-8 organic group; R11, R12 = C1-8 organic group; and a,				

$b = \geq 1$ integer. Thus, 4,4'-diaminodiphenyl ether 19, 1,3-bis(3-aminopropyl)tetramethyldisiloxane 1.2, pyromellitic anhydride 10.8, and 3,3',4,4'-benzophenonetetracarboxylic dianhydride 15 g were reacted at room temperature for 6 h to give a polyamic acid varnish, 3% 3-aminopropionitrile was added therein, applied on a copper-sputtered silicon wafer, a titanium-sputtered silicon wafer, and a gold-sputtered silicon wafer, and cured to give test pieces showing good adhesion between metal materials and a heat-resistant resin.

IT 223255-30-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of heat-resistant resin precursor
compns. for semiconductor devices)

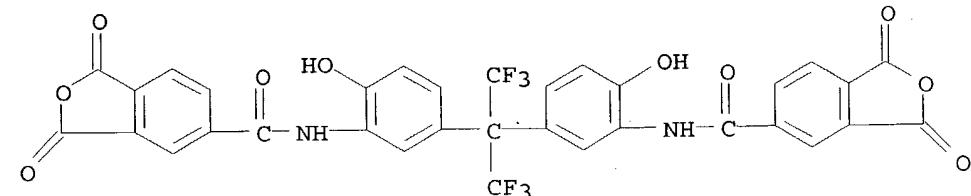
RN 223255-30-9 CAPLUS
CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IT 652968-59-7P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(optionally precursor; preparation of heat-resistant resin
precursor compns. for semiconductor devices)
RN 652968-59-7 CAPLUS
CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 3-aminophenol and 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

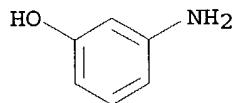
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



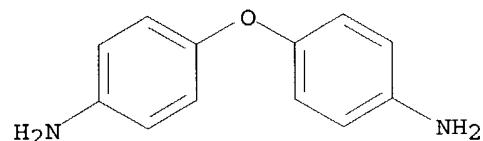
CM 2

CRN 591-27-5
CMF C6 H7 N O



CM 3

CRN 101-80-4
CMF C12 H12 N2 O



IT 261373-47-1P

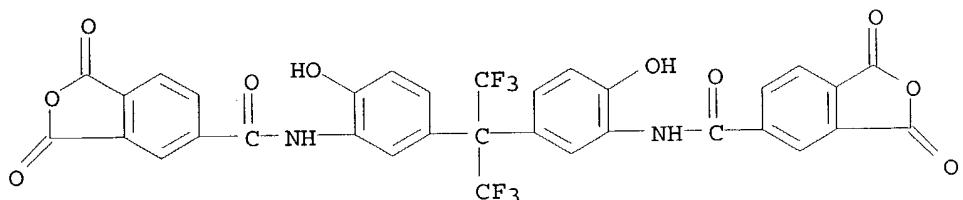
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (optionally precursor; preparation of heat-**resistant** resin precursor compns. for **semiconductor** devices)

RN 261373-47-1 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

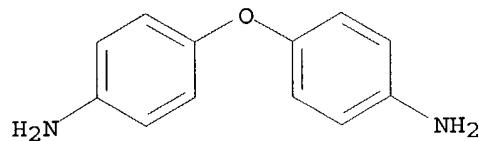
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



CM 2

CRN 101-80-4
CMF C12 H12 N2 O



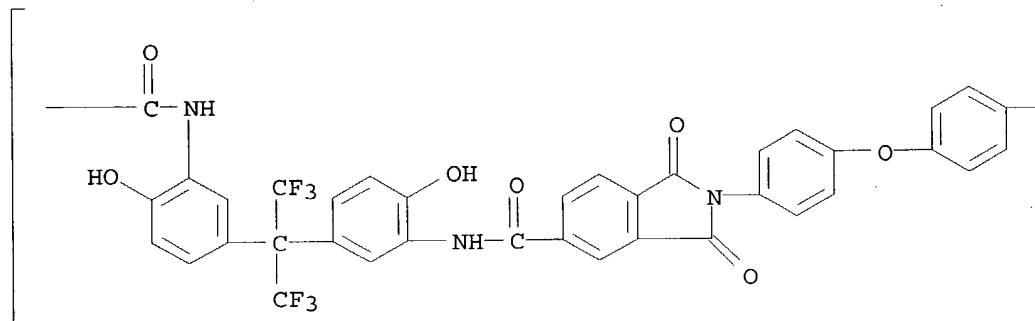
IT 231963-06-7P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of heat-resistant resin precursor compns. for semiconductor devices)

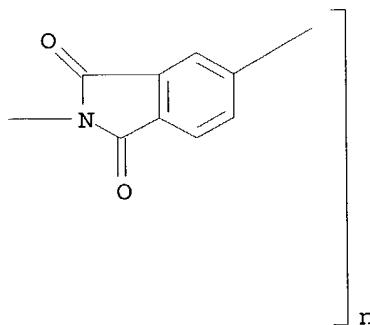
RN 231963-06-7 CAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)-1,4-phenyleneoxy-1,4-phenylene(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)carbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C08L079-08

ICS C08G073-12; C08K005-00; G03F007-022; G03F007-037; H01L021-312
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 74, 76
ST heat **resistant** resin precursor **compn**
semiconductor device; polyether polyketone polysiloxane polyimide
aminopropionitrile **compn**
IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic-polyether-; preparation of heat-**resistant** resin precursor
comps. for **semiconductor** devices)
IT Polyethers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic-polyimide-; preparation of heat-**resistant** resin precursor
comps. for **semiconductor** devices)
IT Polyamic acids
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(fluorine-containing, precursors; preparation of heat-**resistant** resin
precursor **comps.** for **semiconductor** devices)
IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorine-containing; preparation of heat-**resistant** resin precursor
comps. for **semiconductor** devices)
IT Catalysts
(photochem., photoacid; preparation of heat-**resistant** resin
precursor **comps.** for **semiconductor** devices)
IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(polyamic acid-, aromatic, esters, acrylic-, precursors; preparation of
heat-
resistant resin precursor **comps.** for
semiconductor devices)
IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(polyamic acid-, aromatic, fluorine-containing, precursors; preparation of
heat-
resistant resin precursor **comps.** for
semiconductor devices)
IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(polyamic acid-, precursors; preparation of heat-**resistant** resin
precursor **comps.** for **semiconductor** devices)
IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(polyamic acid-polyamide-, aromatic, fluorine-containing, precursors;
preparation
of heat-**resistant** resin precursor **comps.** for
semiconductor devices)

- IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamic acid-polyether-, aromatic, fluorine-containing, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamic acid-polyether-, aromatic, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polysiloxanes, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamic acid-polyether-polyketone-, aromatic, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyketones
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamic acid-polyether-siloxane-, aromatic, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamic acid-polyketone-siloxane-, aromatic, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyamic acids
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyether-, aromatic, fluorine-containing, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyethers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-, fluorine-containing; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-polyether-, fluorine-containing; preparation of heat-

- resistant resin precursor compns. for semiconductor devices)
- IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-polyether-; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-polyether-polyimide-; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyethers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-polyimide-, fluorine-containing; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyamic acids
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyether-, aromatic, esters, acrylic-, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyamic acids
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyether-, aromatic, fluorine-containing, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polybenzoxazoles
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-, fluorine-containing; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polybenzoxazoles
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-polyimide-, fluorine-containing; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polysiloxanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(polyether-polyimide-polyketone-, aromatic; preparation of heat-resistant resin precursor compns. for semiconductor devices)
- IT Polyketones
RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(polyether-polyimide-siloxane-, aromatic; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT Polyamic acids
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyether-polyketone-siloxane-, aromatic, precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(polyether-polyketone-siloxane-, aromatic; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT Polyethers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(polyimide-polyketone-siloxane-, aromatic; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT Polyamides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(precursors; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT Electric insulators
Heat-resistant materials
Negative photoresists
 Semiconductor devices
 (preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT Metals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrates; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 106-50-3, p-Phenylenediamine, uses 123-30-8, 4-Aminophenol 151-18-8,
3-Aminopropionitrile 871-78-3, N,N'-Diacetylenediamine
RL: MOA (Modifier or additive use); USES (Uses)
(adhesion improver; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 7440-21-3, Silicon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(metal-sputtered, substrate; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 129708-71-0P 220426-92-6P 223255-30-9P 251650-61-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 84329-58-8P, 3,3',4,4'-Benzophenonetetracarboxylic dianhydride-1,3-bis(3-aminopropyl)tetramethyldisiloxane-4,4'-diaminodiphenyl ether-pyromellitic anhydride copolymer 261373-55-1P 347147-75-5P 389085-32-9P,
3,5-Diaminobenzoic acid-4,4'-diaminodiphenyl ether-3,3',4,4'-diphenyl ether tetracarboxylic dianhydride dibutyl ester dichloride copolymer
652968-56-4P 652968-57-5P 652968-58-6P 652968-59-7P
656223-50-6P, 4,4'-Diaminodiphenyl ether-ethylene glycol

dimethacrylate-pyromellitic anhydride 2-methacryloylethyl ester-trimethylolpropane triacrylate copolymer 656223-51-7P, 3,5-Diaminobenzoic acid-4,4'-diaminodiphenyl ether-ethylene glycol dimethacrylate-pyromellitic anhydride 2-methacryloylethyl ester-trimethylolpropane triacrylate copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(optionally precursor; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 261373-47-1P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optionally precursor; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 3770-97-6D, Naphthoquinone-1,2-diazido-5-sulfonyl chloride, reaction products with tetrahydroxybenzophenone 31127-54-5D, 2,3,4,4'-Tetrahydroxybenzophenone, reaction products with naphthoquinonediazidosulfonyl chloride 85342-62-7, NAI 105 119666-27-2 172491-61-1, 4NT 300
RL: CAT (Catalyst use); USES (Uses)
(photoacid generator; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 113339-21-2P 261503-24-6P 645385-91-7P 656798-61-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(precursor; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 5538-93-2P
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 112480-78-1P 133515-46-5P 231963-06-7P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 24424-99-5, tert-Butyl dicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(protecting group for hydroxy of monomer; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 108-24-7, Acetic anhydride 929-59-9, 1, 2-Bis(2-aminoethoxy)ethane
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant in adhesion improver preparation; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 71-36-3, n-Butyl alcohol, reactions 121-90-4, 3-Nitrobenzoyl chloride 1204-28-0, Trimellitic anhydride chloride 1333-74-0, Hydrogen, reactions 1823-59-2, 3,3',4,4'-Diphenyl ether tetracarboxylic dianhydride 7719-09-7, Thionyl chloride 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant in monomer preparation; preparation of heat-resistant resin precursor compns. for semiconductor devices)

IT 7440-32-6, Titanium, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(silicon wafer sputtered with, substrate; preparation of heat-
resistant resin precursor compns. for
semiconductor devices)

IT 11116-16-8, Titanium nitride
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; preparation of heat-resistant resin precursor
compns. for semiconductor devices)

L154 ANSWER 5 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:117296 CAPLUS
DOCUMENT NUMBER: 140:172275
TITLE: Photosensitive heat **resistant** resin
precursor **composition**
INVENTOR(S): Fujita, Yoji; Suwa, Mitsuhiro; Tomikawa, Masao
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

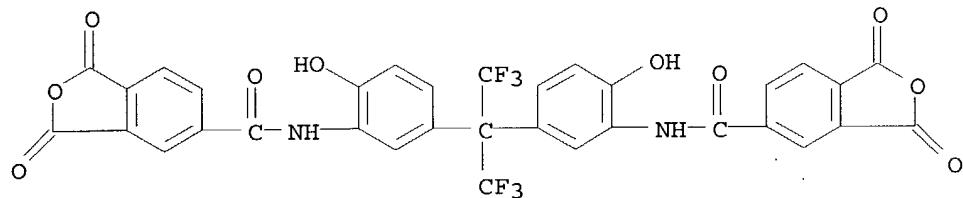
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1388758	A1	20040211	EP 2003-254849	20030804
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2004053156	A1	20040318	US 2003-623680	20030722
CN 1480491	A	20040310	CN 2003-152545	20030801
JP 2004126547	A2	20040422	JP 2003-205652	20030804
JP 2002-227178 A 20020805				

PRIORITY APPLN. INFO.: MARPAT 140:172275
OTHER SOURCE(S): AB A photosensitive resin precursor composition exhibiting an excellent film thickness uniformity contains: a heat resistant resin precursor polymer; a radiation sensitive compound; and a solvent expressed by R1C(=O)-(R2R3C)1-C(OH)R5R4 (R1= C1-3 alkyl group; R2-5 = H, C1-3 alkyl group; 1 = 0-3). The present invention provides a photosensitive resin precursor composition which is suitably used for a surface protection layer and insulating interlayer of a **semiconductor** element, and insulating layer of an organic electroluminescent device.

IT 223255-30-9P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of photosensitive heat **resistant** resin precursor
composition)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-
(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-
1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS G03F007-023
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST photosensitive heat **resistant** resin precursor **compn**
solvent
IT Electroluminescent devices
Light-sensitive materials
(photosensitive heat **resistant** resin precursor **compn**
)
IT 99-57-0, 2-Amino-4-nitrophenol 99-63-8, Isophthaloyl chloride
122-04-3, 4-Nitrobenzoyl chloride 2081-08-5, Bisphenol E 3770-97-6
3867-55-8, Trimellitoyl chloride 36451-09-9 51728-14-4, TrisP-SA
83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
110726-28-8, TrisP-PA 110726-34-6, TrisOCR-PA
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of photosensitive heat **resistant** resin precursor
composition)
IT 25596-69-4P 46907-17-9P 129197-38-2P 223255-30-9P
654646-40-9P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of photosensitive heat **resistant** resin precursor
composition)
IT 96-48-0, γ -Butyrolactone 115-22-0, 3-Hydroxy-3-methyl-2-butanone
116-09-6, Acetol 123-42-2, Diacetone alcohol 127-19-5 823-19-8,
3-Hydroxycyclohexanone 872-50-4, N-Methyl-2-pyrrolidone, uses
26831-63-0
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; photosensitive heat **resistant** resin precursor
composition)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L154 ANSWER 6 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:32658 CAPLUS
DOCUMENT NUMBER: 140:101757
TITLE: Polymer **compositions** with excellent
resistance to oxidative decomposition and
organic electroluminescent elements using them as
insulating layers
INVENTOR(S): Arai, Nana; Tomikawa, Masao; Okuda, Ryoji
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

LANGUAGE:

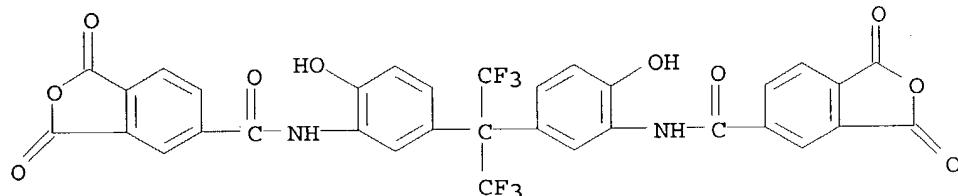
Japanese

FAMILY ACC. NUM. COUNT:

1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004010696	A2	20040115	JP 2002-163998	20020605
PRIORITY APPLN. INFO.:			JP 2002-163998	20020605
AB The compns., preferably containing curing agents with groups CH ₂ OR (R = H, C ₁ -20 alkyl, C ₄ -20 alicyclic group, RbCO; Rb = C ₁ -20 alkyl), give films with thickness 0.05-20.0 μm showing thickness reduction rate during UV ozone treatment ≤0.015 μm/min or thickness reduction rate during O plasma treatment ≤0.005 μm/min.				
IT 223255-30-9DP, reaction products with diamines RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (cured; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)				
RN 223255-30-9 CAPLUS				
CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)				



IC	ICM C08L079-08 ICS C08K005-13; H05B033-14; H05B033-22
CC	73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties) Section cross-reference(s): 38, 76
ST	elec insulator polymer oxidative decompn resistance; UV ozone resistance polyimide thickness retention; electroluminescent device dielec film plasma treatment
IT	Aminoplasts RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses) (Nikalac MX 290, curing agent; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
IT	Acrylic polymers, uses Silsesquioxanes RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (cured; polymer compns. with good oxidative decomposition

- resistance** for dielec. films for organic electroluminescent elements)
- IT Phenolic resins, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (epoxy; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Phenolic resins, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (novolak, cresol-based, cured; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Epoxy resins, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (phenolic; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Polysiloxanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-polyether-polyimide-, fluorine-containing, cured; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Fluoropolymers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-polyether-polyimide-polysiloxane-, cured; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-polyether-polysiloxane-, fluorine-containing, cured; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Polysiloxanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-polyimide-, fluorine-containing, cured; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Polyethers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-polyimide-polysiloxane-, fluorine-containing, cured; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)
- IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-polysiloxane-, fluorine-containing, cured; polymer **compns.** with good oxidative decomposition **resistance** for

- dielec. films for organic electroluminescent elements)
- IT Polyethers, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polybenzoxazole-, cured; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT Polybenzoxazoles
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-, cured; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT Polyamides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyether-polyimide-polysiloxane-, fluorine-containing, cured; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT Polyamides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyimide-polysiloxane-, fluorine-containing, cured; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT Dielectric films
Electroluminescent devices
(polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT 91-04-3, 2,6-Bis(hydroxymethyl)-p-cresol
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses) (DML-PC, curing agent; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT 9011-05-6, Nikalac MX 270
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses) (Nikalac MX 290, curing agent; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT 2768-02-7, KBM 1003
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses) (coupling agent; polymer compns. with good oxidative decomposition resistance for dielec. films for organic electroluminescent elements)
- IT 101-80-4DP, 4,4'-Diaminodiphenyl ether, reaction products with acid anhydride and diamine 2420-87-3DP, 3,3',4,4'-Biphenyltetracarboxylic dianhydride, reaction products with diamines 25035-81-8P, Methacrylic acid-methyl methacrylate-styrene copolymer 27029-76-1P, m-Cresol-p-cresol-formaldehyde copolymer 129197-38-2DP, reaction products with biphenyltetracarboxylic dianhydride and diamine 162816-07-1P 223255-30-9DP, reaction products with diamines

347147-75-5P 645385-91-7P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (cured; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)

IT 22247-58-1, 2,2'-Methylenebis[6-(hydroxymethyl)-4-methylphenol] 32449-09-5, 2,6-Bismethoxymethyl-p-cresol 109129-38-6 421546-91-0
 643090-86-2, Nikalac MX 750LM
 RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses) (curing agent; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)

IT 122-04-3, 4-Nitrobenzoyl chloride 3867-55-8, Trimellitic chloride 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
 RL: RCT (Reactant); RACT (Reactant or reagent) (for monomer preparation; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)

IT 3584-23-4D, TAZ 104, esters 20546-03-6D, 1,2-Naphthoquinone-2-diazide-5-sulfonic acid, esters
 RL: CAT (Catalyst use); USES (Uses) (photoacid generator; polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)

IT 641629-22-3P 641629-23-4P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polymer **compns.** with good oxidative decomposition **resistance** for dielec. films for organic electroluminescent elements)

L154 ANSWER 7 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:951321 CAPLUS
 DOCUMENT NUMBER: 140:21276
 TITLE: Photosensitive resin **composition** and method for preparing heat-**resistant** resin film
 INVENTOR(S): Miyoshi, Kazuto; Okuda, Ryoji; Tomikawa, Masao
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: PCT Int. Appl., 62 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003100522	A1	20031204	WO 2003-JP6654	20030528
W: CN, KR, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
JP 2004054254	A2	20040219	JP 2003-150454	20030528
PRIORITY APPLN. INFO.:			JP 2002-155460	A 20020529

AB The invention relates to a photosensitive resin composition which comprises (a) a resin having a specific structure, (b) a photosensitive agent and (c) an organic solvent having a b.p. under atmospheric pressure of 100°C to 140 °C, and contains the (c) component in an amount of 50 to 100 weight % relative to the total amount of the organic solvent; and a method for a heat -resistant resin film comprising using the resin composition. The resin composition

is advantageous in that it is less prone to causing defects such as transfer marks or furrows. The resin composition is suitable for a dielec. layer of organic EL display panels, a surface protecting layer and interlayer-insulating layer of **semiconductor** devices, etc.

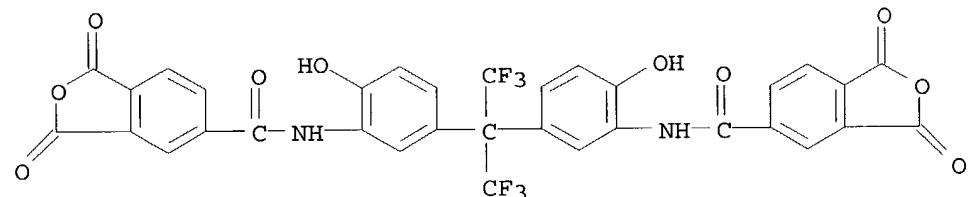
IT 223255-30-9P 236095-20-8DP, maleic anhydride terminated

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(photosensitive resin **composition** and method for preparing heat-
resistant resin film)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



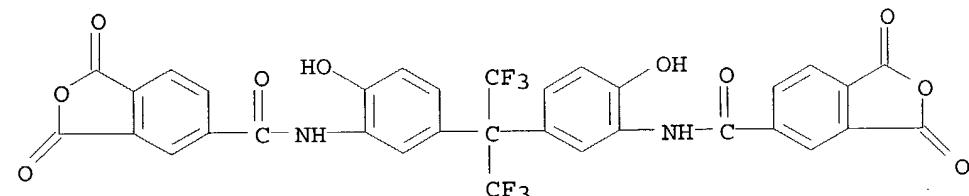
RN 236095-20-8 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

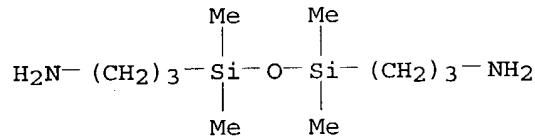
CRN 223255-30-9

CMF C33 H16 F6 N2 O10



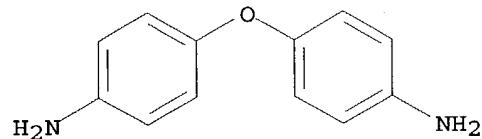
CM 2

CRN 2469-55-8
CMF C10 H28 N2 O Si2



CM 3

CRN 101-80-4
CMF C12 H12 N2 O



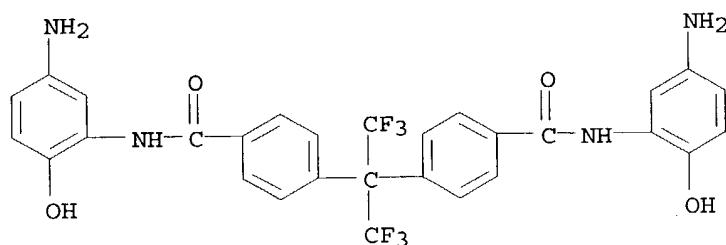
IT 630402-12-9P 630402-13-0P 630402-15-2P
630402-20-9DP, 3-aminophenol terminated
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(photosensitive resin composition and method for preparing heat-
resistant resin film)

RN 630402-12-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-
(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-
1,3-dioxo-, polymer with 4,4'-[2,2,2-trifluoro-1-
(trifluoromethyl)ethylidene]bis[N-(5-amino-2-hydroxyphenyl)benzamide]
(9CI) (CA INDEX NAME)

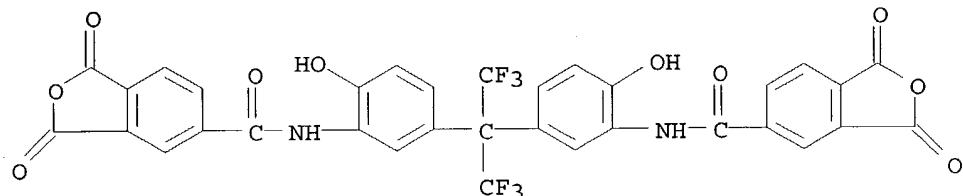
CM 1

CRN 497061-36-6
CMF C29 H22 F6 N4 O4



CM 2

CRN 223255-30-9
CMF C33 H16 F6 N2 O10

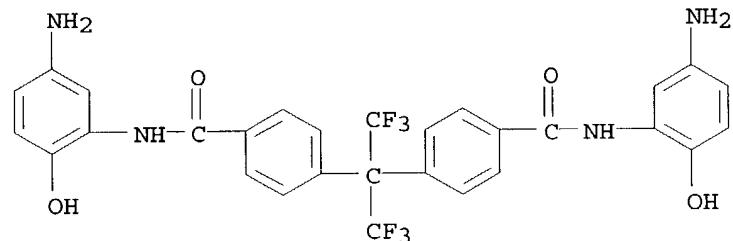


RN 630402-13-0 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo-, polymer with 4-aminophenol and 4,4'-(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene)bis[N-(5-amino-2-hydroxyphenyl)benzamide] (9CI) (CA INDEX NAME)

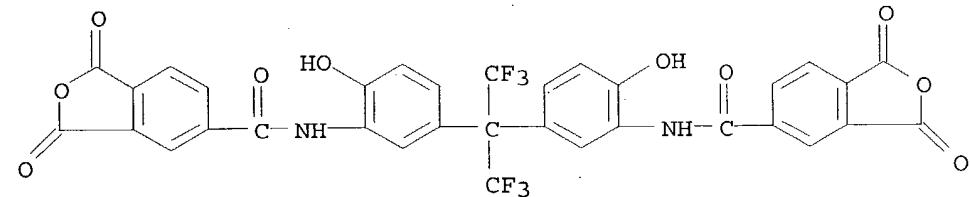
CM 1

CRN 497061-36-6
CMF C29 H22 F6 N4 O4



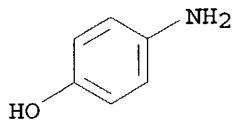
CM 2

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



CM 3

CRN 123-30-8
CMF C6 H7 N O

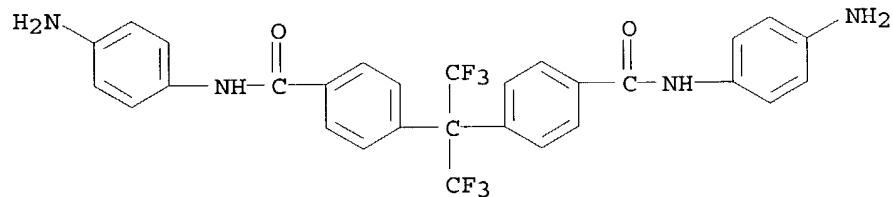


RN 630402-15-2 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 3-amino-N-(5-amino-2-hydroxyphenyl)benzamide and 4,4'-(2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[N-(4-aminophenyl)benzamide] (9CI) (CA INDEX NAME)

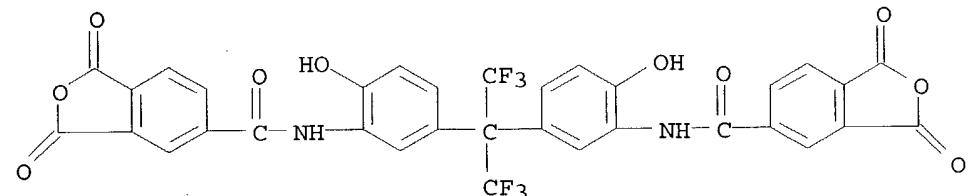
CM 1

CRN 630402-14-1
CMF C29 H22 F6 N4 O2



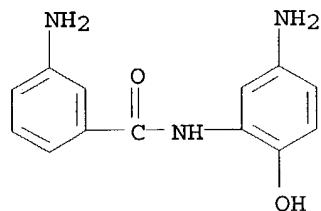
CM 2

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



CM 3

CRN 27431-43-2
CMF C13 H13 N3 O2



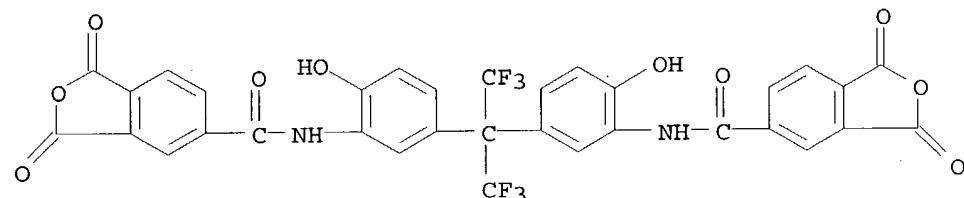
RN 630402-20-9 CAPLUS

CN Benzoic acid, 3,5-diamino-, polymer with 4,4'-oxybis[benzenamine] and N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[6-hydroxy-3,1-phenylene]bis[1,3-dihydro-1,3-dioxo-5-isobenzofurancarboxamide] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

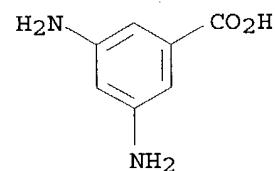
CMF C33 H16 F6 N2 O10



CM 2

CRN 535-87-5

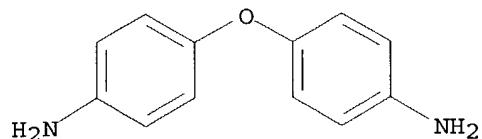
CMF C7 H8 N2 O2



CM 3

CRN 101-80-4

CMF C12 H12 N2 O



IC ICM G03F007-037
ICS G03F007-022; H05B033-10; H05B033-14
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 76
ST photosensitive resin compn heat **resistant** film
IT Heat-**resistant** materials
(films; photosensitive resin **composition** and method for preparing heat-**resistant** resin film)
IT Films
(heat-**resistant**; photosensitive resin **composition** and method for preparing heat-**resistant** resin film)
IT Light-sensitive materials
Optical imaging devices
Positive photoresists
Semiconductor device fabrication
(photosensitive resin **composition** and method for preparing heat-**resistant** resin film)
IT Polyamic acids
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photosensitive resin **composition** and method for preparing heat-**resistant** resin film)
IT 96-48-0, γ -Butyrolactone 97-64-3, Ethyl lactate 107-87-9, Methyl propyl ketone 110-80-5, Ethylene glycol monoethyl ether 123-86-4, Butyl acetate 127-19-5 694-85-9, N-Methyl-2-pyridone 872-50-4, N-Methyl-2-pyrrolidone, uses 1320-67-8, Propylene glycol monomethyl ether 52125-53-8, Propyleneglycol monoethyl ether
RL: NUU (Other use, unclassified); USES (Uses)
(photosensitive resin **composition** and method for preparing heat-**resistant** resin film)
IT 71-36-3, Butylalcohol, reactions 99-57-0, 2-Amino-4-nitrophenol 1102-92-7, 2,2-Bis[4-(chlorocarbonyl)phenyl]hexafluoropropane 1823-59-2, 3,3',4,4'-Diphenyl ether tetracarboxylic acid dianhydride 3867-55-8, Trimellitic acid chloride 7719-09-7, Thionyl chloride 18708-46-8, Benzoic acid, 4-(chlorocarbonyl)- 71849-58-6, Hydroxybenzotriazole 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(photosensitive resin **composition** and method for preparing heat-**resistant** resin film)
IT 122-04-3P, 4-Nitrobenzoyl chloride 27431-43-2P 152431-91-9P
223255-30-9P 236095-20-8DP, maleic anhydride terminated
288396-16-7P 431041-52-0P 497061-36-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(photosensitive resin **composition** and method for preparing heat-**resistant** resin film)

IT 80-05-7DP, Bisphenol A, 5-naphthoquinonediazidesulfonyl ester 99-89-8DP,
 4-Isopropylphenol, 5-naphthoquinonediazidesulfonyl ester 3770-97-6DP,
 o-Naphthoquinonediazide-5-sulfonyl chloride, ester with aryl phenolderiv.
 27955-94-8DP, TrisP-HAP, 5-naphthoquinonediazidesulfonyl ester
 110726-28-8DP, Tris-PA (phenol), 5-naphthoquinonediazidesulfonyl ester
630402-12-9P 630402-13-0P 630402-15-2P
 630402-18-5DP, 3-aminophenol terminated 630402-18-5DP,
 4-ethynylaniline-terminated 630402-19-6P 630402-20-9DP,
 3-aminophenol terminated 630402-21-0P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (photosensitive resin **composition** and method for preparing heat-
 resistant resin film)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L154 ANSWER 8 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:794020 CAPLUS

DOCUMENT NUMBER: 139:314238

TITLE: Plastic optical waveguide material

INVENTOR(S): Fujiwara, Makoto; Otsuki, Tomohito; Miyao, Kenji

PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

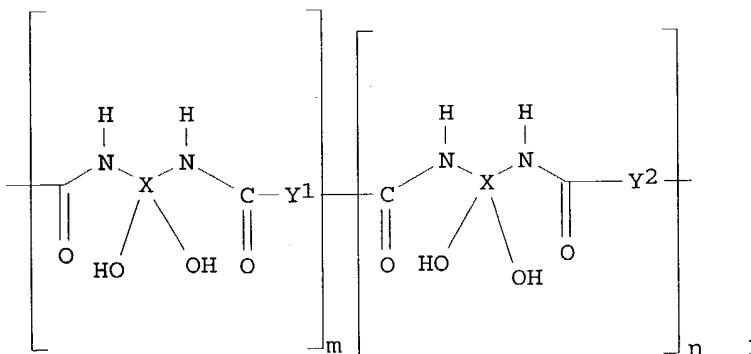
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003287634	A2	20031010	JP 2002-111274	20020412
PRIORITY APPLN. INFO.:			JP 2002-13468	A 20020122

GI



AB The invention relates to a plastic material, suited for use in making an optical waveguide, represented by I [X = tetravalent organic group; Y1 and Y2

= divalent organic group dissimilar to each other; $m > 0$, $n \geq 0$, and $1000 \geq m + n \geq 2$]. The difference in the refractive index between the compds. represented by the structural repeating unit m and n , is $\geq 3\%$.

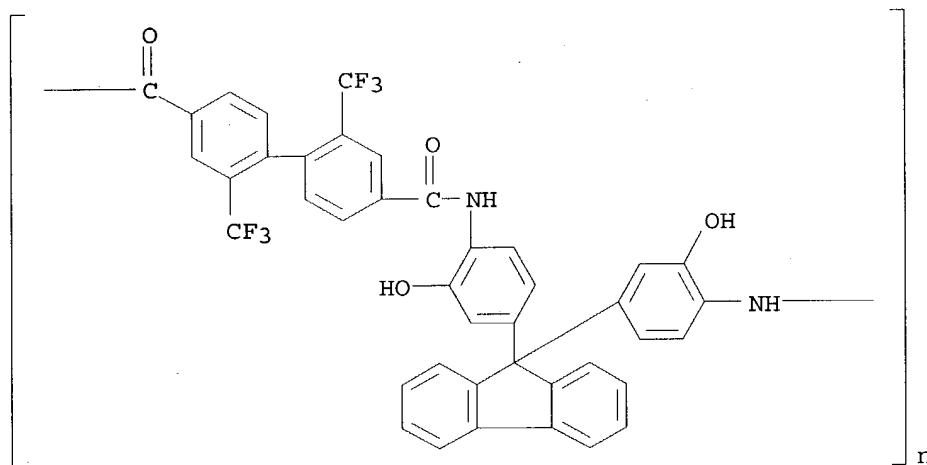
IT 612089-35-7P 612089-36-8P 612089-37-9P

612089-39-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(plastic optical waveguiding material)

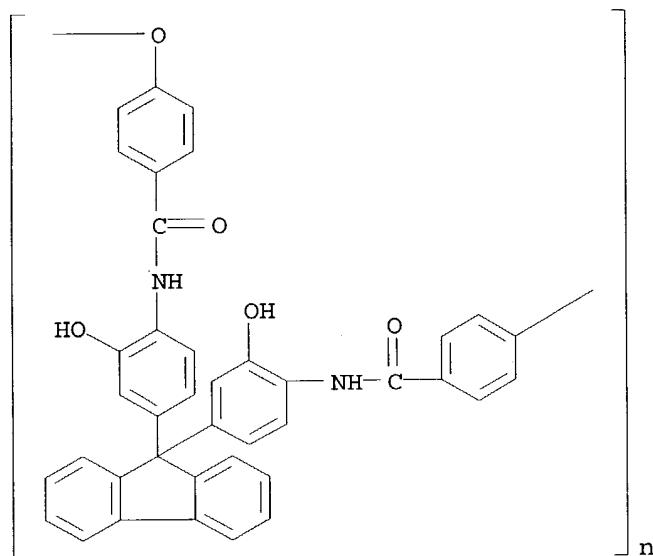
RN 612089-35-7 CAPLUS

CN Poly[imino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)iminocarbonyl[2,2'-bis(trifluoromethyl)[1,1'-biphenyl]-4,4'-diyl]carbonyl] (9CI) (CA INDEX NAME)



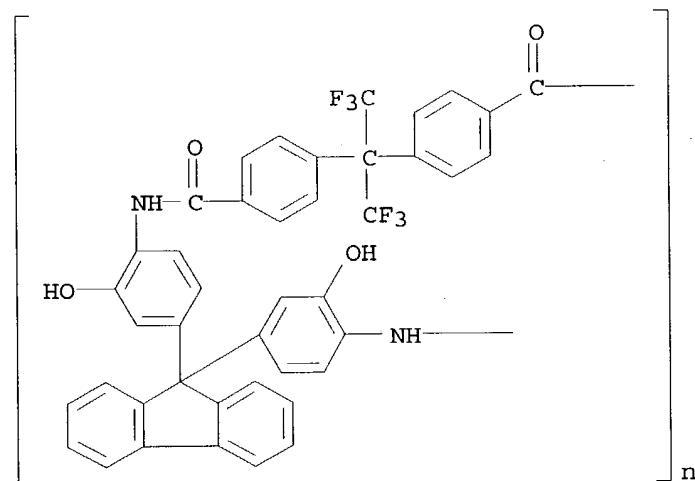
RN 612089-36-8 CAPLUS

CN Poly[oxy-1,4-phenylene carbonylimino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)



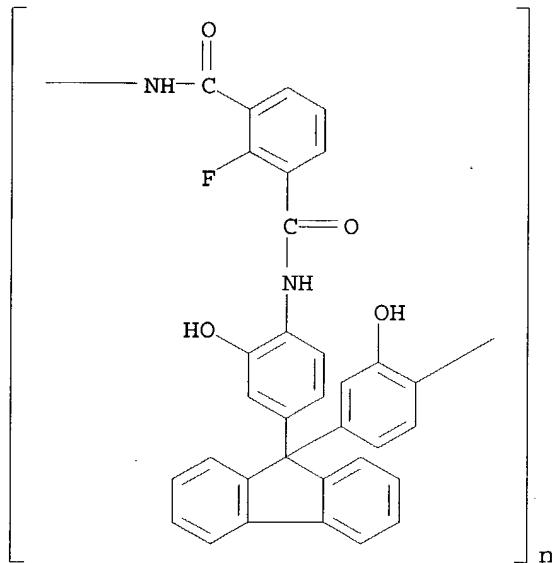
RN 612089-37-9 CAPLUS

CN Poly[imino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenylene[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]-1,4-phenylene carbonyl] (9CI) (CA INDEX NAME)



RN 612089-39-1 CAPLUS

CN Poly[iminocarbonyl(2-fluoro-1,3-phenylene)carbonylimino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



IC ICM G02B006-12
 ICS C08G073-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38
 ST plastic optical waveguide material **polybenzoxazole** fluoropolymer
 IT Optical materials
 Optical waveguides
 (plastic optical waveguiding material)
 IT **Polybenzoxazoles**
 RL: DEV (Device component use); USES (Uses)
 (plastic optical waveguiding material)
 IT Fluoropolymers, properties
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (plastic optical waveguiding material)
 IT 612088-70-7P 612088-80-9P 612088-85-4P 612088-86-5P 612088-92-3P
 612088-98-9P 612089-00-6P 612089-46-0P 612089-62-0P 612089-76-6P
 612089-77-7P 612089-93-7P 612090-10-5P 612090-25-2P 612090-40-1P
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (plastic optical waveguiding material)
 IT 146167-67-1P 276870-16-7P 276870-17-8P 276873-48-4P 276873-49-5P
 438202-03-0P 438202-04-1P 438202-11-0P 438202-12-1P 438527-23-2P
 612088-68-3P 612088-69-4P 612088-71-8P 612088-72-9P 612088-73-0P
 612088-75-2P 612088-76-3P 612088-77-4P 612088-78-5P 612088-82-1P
 612088-83-2P 612088-84-3P 612088-87-6P 612088-88-7P 612088-89-8P
 612088-90-1P 612088-91-2P 612088-94-5P 612088-95-6P 612088-96-7P
 612088-97-8P 612088-99-0P 612089-01-7P 612089-02-8P 612089-03-9P
 612089-04-0P 612089-05-1P 612089-06-2P 612089-07-3P 612089-08-4P
 612089-09-5P 612089-47-1P 612089-48-2P 612089-49-3P 612089-51-7P
 612089-53-9P 612089-54-0P 612089-55-1P 612089-56-2P 612089-57-3P
 612089-58-4P 612089-59-5P 612089-60-8P 612089-61-9P 612089-63-1P
 612089-64-2P 612089-65-3P 612089-66-4P 612089-67-5P 612089-68-6P

612089-69-7P	612089-70-0P	612089-71-1P	612089-72-2P	612089-73-3P
612089-74-4P	612089-75-5P	612089-78-8P	612089-79-9P	612089-80-2P
612089-81-3P	612089-82-4P	612089-83-5P	612089-84-6P	612089-86-8P
612089-87-9P	612089-88-0P	612089-89-1P	612089-90-4P	612089-91-5P
612089-92-6P	612089-94-8P	612089-95-9P	612089-96-0P	612089-97-1P
612089-98-2P	612090-00-3P	612090-02-5P	612090-03-6P	612090-04-7P
612090-05-8P	612090-06-9P	612090-07-0P	612090-08-1P	612090-09-2P
612090-11-6P	612090-12-7P	612090-13-8P	612090-14-9P	612090-15-0P
612090-16-1P	612090-17-2P	612090-18-3P	612090-19-4P	612090-20-7P
612090-21-8P	612090-22-9P	612090-23-0P	612090-24-1P	612090-26-3P
612090-27-4P	612090-28-5P	612090-29-6P	612090-30-9P	612090-31-0P
612090-32-1P	612090-33-2P	612090-34-3P	612090-35-4P	612090-36-5P
612090-37-6P	612090-38-7P	612090-39-8P	612090-41-2P	612090-42-3P
612090-43-4P	612090-44-5P	612090-45-6P	612090-46-7P	612090-47-8P
612090-48-9P	612090-49-0P	612090-50-3P	612090-51-4P	612090-52-5P
612090-53-6P	612090-54-7P	613223-94-2P	616879-85-7P	616883-09-1P
616883-15-9P	616883-37-5P	616883-62-6P	616883-63-7P	616884-86-7P
616884-87-8P	616884-88-9P	616885-16-6P	616885-77-9P	616885-78-0P
616885-79-1P	616885-88-2P	616886-25-0P	616886-26-1P	616886-32-9P
616886-42-1P	616886-44-3P	616886-58-9P	616886-59-0P	616888-49-4P
616888-57-4P	616888-72-3P	616888-73-4P	616888-74-5P	616888-79-0P
616888-80-3P	616888-81-4P	619328-56-2P	619328-57-3P	619328-69-7P
619328-71-1P	619328-72-2P	619328-73-3P	619328-74-4P	619328-84-6P
619328-95-9P	619328-97-1P	619328-98-2P	619329-08-7P	619332-11-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(plastic optical waveguiding material)

IT 146186-11-0P 612089-10-8P 612089-12-0P 612089-13-1P 612089-14-2P
 612089-15-3P 612089-16-4P 612089-17-5P 612089-18-6P 612089-19-7P
 612089-20-0P 612089-21-1P 612089-22-2P 612089-23-3P 612089-24-4P
 612089-25-5P 612089-26-6P 612089-27-7P 612089-28-8P 612089-29-9P
 612089-30-2P 612089-31-3P 612089-32-4P 612089-33-5P 612089-34-6P
612089-35-7P 612089-36-8P 612089-37-9P
 612089-38-0P 612089-39-1P 612089-40-4P 612089-41-5P
 612089-42-6P 612089-43-7P 612089-44-8P 612089-45-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(plastic optical waveguiding material)

L154 ANSWER 9 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:750884 CAPLUS
 DOCUMENT NUMBER: 139:278046
 TITLE: Polyamide-based varnish compositions for
 semiconductor device insulating microporous
 films
 INVENTOR(S): Oki, Hiromi; Enoki, Naoshi
 PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
JP 2003268233	A2	20030925	JP 2002-72684	20020315

PRIORITY APPLN. INFO.: JP 2002-72684 20020315

AB The compns. contain a copolymer (C) prepared by reacting a polyamide (A) with functional groups including carboxyl, amino, or hydroxyl, group with a reactive oligomer (B), a polyamide (D) and an oligomer (E). Thus, reacting 10 g styrene with 0.044 g ethylene oxide, then with 2.63 g 4-nitrobenzoic chloride, and reducing (preparation given) gave an styrene oligomer 4-aminobenzoate derivative, 38.4 g of which was reacted with a copolymer of 9,9-bis[(4-amino-3-hydroxy)phenyl]fluorene and 5-ethynylisophthalic dichloride to give a C, 8.0 g of which was then mixed with 2.0 g a copolymer of 9,9-bis[(4-amino-3-hydroxy)phenyl]fluorene and isophthalic dichloride and 6.4 g B to give a title composition showing claimed properties after coated on silicon wafers.

IT 488838-66-0P 604812-46-6DP, reaction product with 4-aminobenzoated styrene oligomer 604812-48-8P
604812-59-1P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (in polyamide-based varnish compns. for **semiconductor** device insulating microporous films)

RN 488838-66-0 CAPLUS

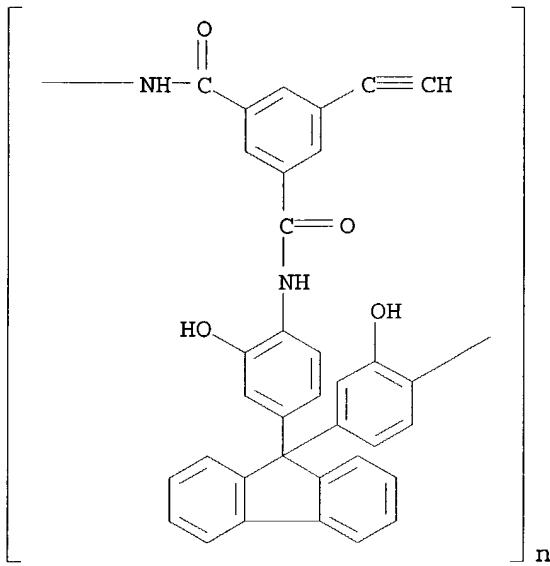
CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenylenecarbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

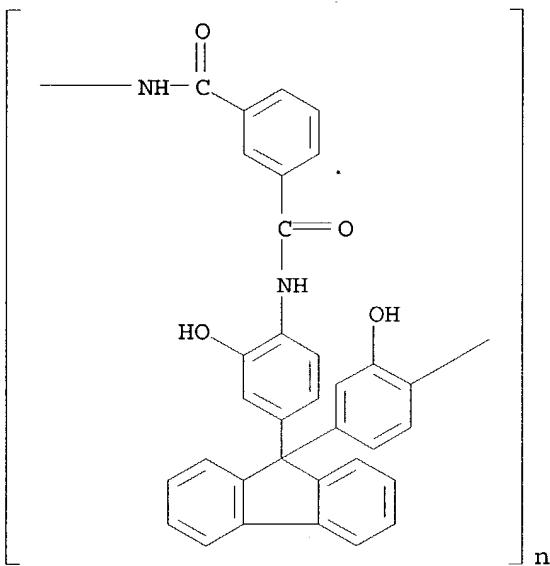
RN 604812-46-6 CAPLUS

CN Poly[iminocarbonyl(5-ethynyl-1,3-phenylene)carbonylimino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



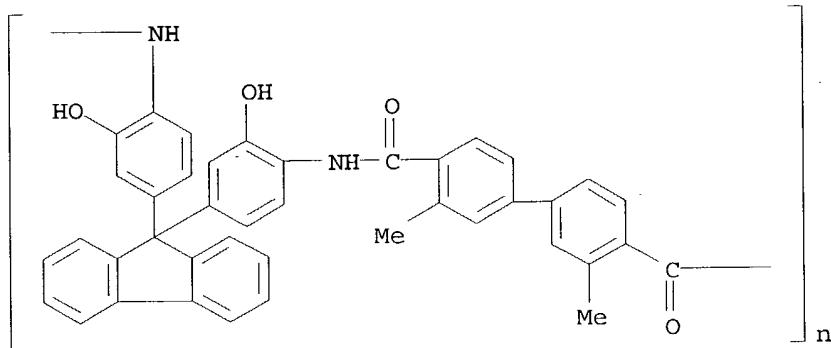
RN 604812-48-8 CAPLUS

CN Poly[iminocarbonyl-1,3-phenylene carbonylimino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



RN 604812-59-1 CAPLUS

CN Poly[imino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)iminocarbonyl(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)carbonyl] (9CI) (CA INDEX NAME)



IC ICM C08L077-06
ICS C08G069-48; C08L101-02; H01L021-312

CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76

ST aminobenzoated styrene oligomer polyamide varnish compn insulating film;
semiconductor device microporous insulating film polyamide varnish
compn

IT Electric insulators
(coatings; polyamide-based reactive varnish compns. for
semiconductor device insulating microporous films)

IT Dielectric films
(fabrication **semiconductor** device insulating microporous
films from polyamide-based varnish compns.)

IT Polyamides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(in polyamide-based reactive varnish compns. for **semiconductor**
device insulating microporous films)

IT Polyoxalkylenes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamide-, reaction product with 4-aminobenzoate derivs. of styrene
oligomers; in polyamide-based reactive varnish compns. for
semiconductor device insulating microporous films)

IT Varnishes
(polyamide-based reactive varnish compns. for **semiconductor**
device insulating microporous films)

IT Polyamides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyoxalkylene-, reaction product with 4-aminobenzoate derivs. of
styrene oligomers; in polyamide-based reactive varnish compns. for
semiconductor device insulating microporous films)

IT Polyamides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(reaction products, with 4-aminobenzoate derivs. of styrene oligomers;
in polyamide-based reactive varnish compns. for **semiconductor**
device insulating microporous films)

IT **Semiconductor** devices
(using insulating microporous films from polyamide-based varnish

compns.)

IT 25267-79-2DP, Ethylene oxide-styrene copolymer, 4-aminobenzoate derivs., reaction product with reactive polyamides 112513-26-5P 113716-09-9P 359862-18-3P 393543-16-3DP, reaction product with 4-aminobenzoated styrene oligomer 404591-37-3DP, reaction product with 4-aminobenzoated styrene oligomer 488838-66-0P 604812-45-5DP, reaction product with 4-aminobenzoated styrene oligomer 604812-46-6DP, reaction product with 4-aminobenzoated styrene oligomer 604812-47-7P 604812-48-8P 604812-49-9DP, reaction product with 4-aminobenzoated styrene oligomer 604812-50-2DP, reaction product with 4-aminobenzoated styrene oligomer 604812-51-3P 604812-52-4P 604812-53-5DP, reaction product with 4-aminobenzoated styrene oligomer 604812-54-6DP, reaction product with 4-aminobenzoated styrene oligomer 604812-55-7P 604812-56-8P 604812-57-9DP, reaction product with 4-aminobenzoated styrene oligomer 604812-58-0P 604812-59-1P 604812-60-4DP, reaction product with 4-aminobenzoated styrene oligomer
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (in polyamide-based varnish compns. for **semiconductor** device insulating microporous films)

IT 122-04-3DP, reaction product with ethylene oxide-styrene copolymer, hydrogenated 25267-79-2DP, Ethylene oxide-styrene copolymer, reaction product with 4-nitrobenzoic chloride, hydrogenated
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (oligomer; in polyamide-based varnish compns. for **semiconductor** device insulating microporous films)

IT 7440-21-3, Silicon, miscellaneous
 RL: MSC (Miscellaneous) (wafer; fabrication **semiconductor** device insulating microporous films from polyamide-based varnish compns.)

L154 ANSWER 10 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:693993 CAPLUS
 DOCUMENT NUMBER: 139:237730
 TITLE: Positive-working photosensitive resin compositions containing polyimide or polyoxazole precursors, pattern formation using them, and electronic devices having the pattern
 INVENTOR(S): Minegishi, Tomonori
 PATENT ASSIGNEE(S): Hitachi Chemical Du Pont Micro System Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003248314	A2	20030905	JP 2002-48025	20020225
PRIORITY APPN. INFO.:	JP 2002-48025 20020225			
AB	The compns., which show high sensitivity and good resolution and provides a cured film with high mech. strength and heat resistance, contain (A) polyimide or polyoxazole precursors which contain (a) heat-polymerizable			

functional groups at the terminals and (b) OR (R = acid-decomposable monovalent organic group to be converted into H atom) or CO₂R attached to aromatic ring and (B) radiation-sensitive acid generators.

IT 593272-62-9P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working photoresist compns. containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

RN 593272-62-9 CAPLUS

CN Poly[oxy-1,4-phenylenecarbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl-1,4-phenylene], α -[4-[[[5-[1-[3-[[[(3-carboxybicyclo[2.2.1]hept-5-en-2-yl)carbonyl]amino]-4-hydroxyphenyl]-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2-hydroxyphenyl]amino]carbonyl]phenyl]- ω -[4-[[[5-[1-[3-[[[(3-carboxybicyclo[2.2.1]hept-5-en-2-yl)carbonyl]amino]-4-hydroxyphenyl]-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2-hydroxyphenyl]amino]carbonyl]phenoxy]-, homopolymer (9CI) (CA INDEX NAME)

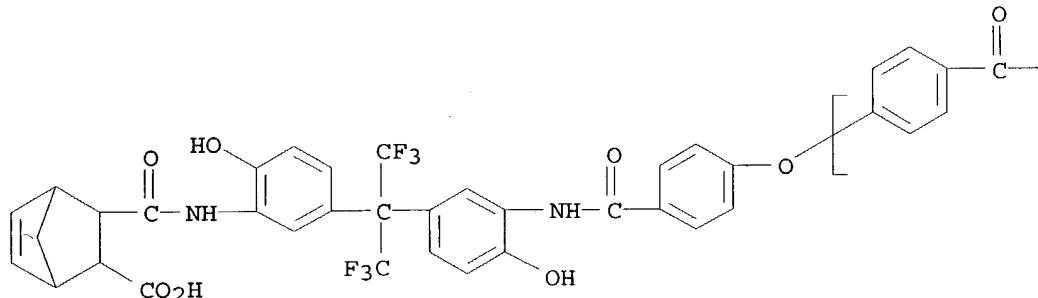
CM 1

CRN 361347-08-2

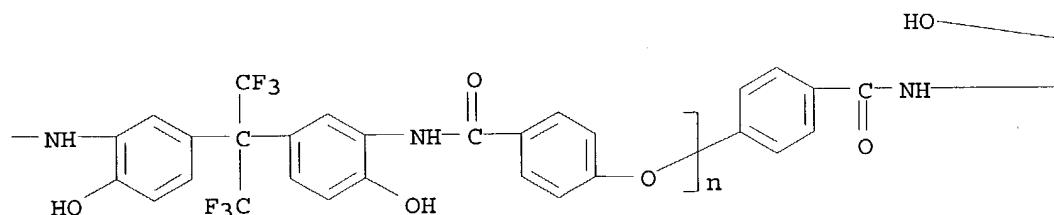
CMF (C₂₉ H₁₈ F₆ N₂ O₅)_n C₆₂ H₄₆ F₁₂ N₄ O₁₃

CCI PMS

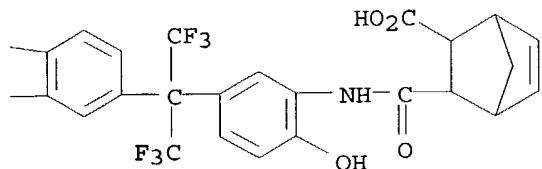
PAGE 1-A



PAGE 1-B



PAGE 1-C



IC ICM G03F007-039
 ICS C08F299-02; C08G073-06; C08G073-10; G03F007-40; H01L021-027

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76

ST pos photoresist heat polymerizable group terminated polyimide precursor; polyoxazole precursor heat polymerizable group terminated pos photoresist

IT Polyethers, preparation
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyamide-; pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT Polyethers, preparation
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polybenzoxazole-, fluorine-containing; pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT Polyethers, preparation
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polybenzoxazole-; pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT Fluoropolymers, preparation
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polybenzoxazole-polyether-; pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT **Polybenzoxazoles**
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyether-, fluorine-containing; pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT Polyamides, preparation

Polybenzoxazoles

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-; pos.-working **photoresist compns.**
containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT Dielectric films

Semiconductor devices

(pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT Polyamic acids

Polybenzoxazoles

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT 85342-63-8 405263-63-0

RL: CAT (Catalyst use); USES (Uses)

(photoacid generator; pos.-working **photoresist compns.**
containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

IT 593272-62-9P 593272-65-2P 593278-83-2P 593278-85-4P

593278-87-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist compns.** containing heat polymerizable group-terminated polyimide or polyoxazole precursors having acid-decomposable group for protective film or interlayer insulating film for electronic devices)

L154 ANSWER 11 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:671172 CAPLUS

DOCUMENT NUMBER: 139:198446

TITLE: Porous **polybenzoxazole** films having extremely low permittivity, their preparation, and their use in **semiconductor** devices

INVENTOR(S): Oki, Hiromi; Enoki, Naoshi

PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003238724	A2	20030827	JP 2002-47120	20020222
PRIORITY APPLN. INFO.:			JP 2002-47120	20020222

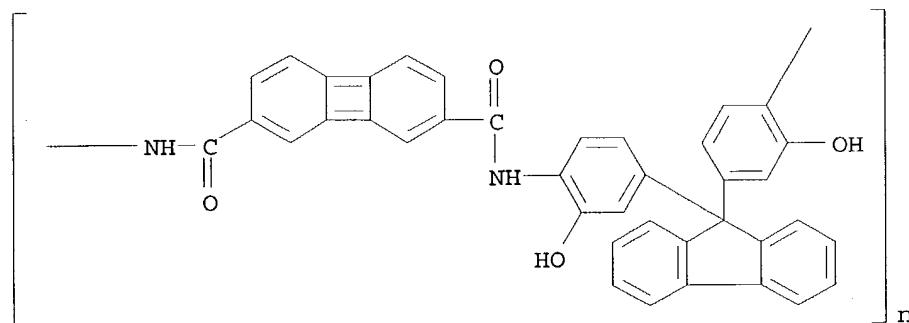
AB Compns. for forming dielec. films of interlayer dielecs., protection films, solder resists, etc., contg.polyamides (A) involving repeating units represented by general formula $[NHX(OH)2NHCOYCO]_n$ [X = divalent group selected from those derived from bisaminophenols such as 2,4-diaminoresorcinol, 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane, 9,9-bis[4-[(4-amino-3-hydroxy)phenoxy]phenyl]fluorene, etc.; Y = ≥ 1 of divalent group derived from dicarboxylic acids such as 3-ethynylphthalic acid, 2,2-bis(3-carboxy-4-ethynylphenyl)propane, 1,2-biphenyleneddicarboxylic acid, 4,4'-tolandicarboxylic acid, isophthalic acid, 3,3'-sulfonylbisbenzoic acid, etc.] and oligomers (B) , dissolved in 50-99.7% solvents (C) , are formed into films by solvent casting method and exposed to vapors free form the solvents to remove the oligomers and to give fine pores in the films. Thus, polymerizing 37.7 g 9,9-bis[(4-amino-3-hydroxy)phenyl]fluorene with 27.7 g 4-ethynyl-2,6-naphthalenedicarboxylic acid dichloride in the presence of Et₃N gave a polyamide with Mw 24,900 and polydispersity 2.2, 3.1 g of which was dissolved in NMP together with 1.3 g polyoxypropylene with Mn 7500, filtered to give a varnish, spin-coated on Al vapor-deposited Si wafers, dried at 120°, exposed to vapor MeOH, and heated at 300° and O concentration ≤ 100 ppm to give **polybenzoxazole** films. The films were then heated at 400° to decompose oligomer units to give porous **polybenzoxazole** films, vapor-deposited with AL and patterned to give electrodes. The films showed permittivity at 1 MHz 2.1, T_g >450°, and contained ≤ 5 -nm fine pores dispersed uniformly.

IT 582294-76-6P 582294-78-8P, 9,9-Bis[(4-amino-3-hydroxy)phenyl]fluorene-4,4'-tolandicarboxylic acid dichloride copolymer, sru 582294-79-9P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

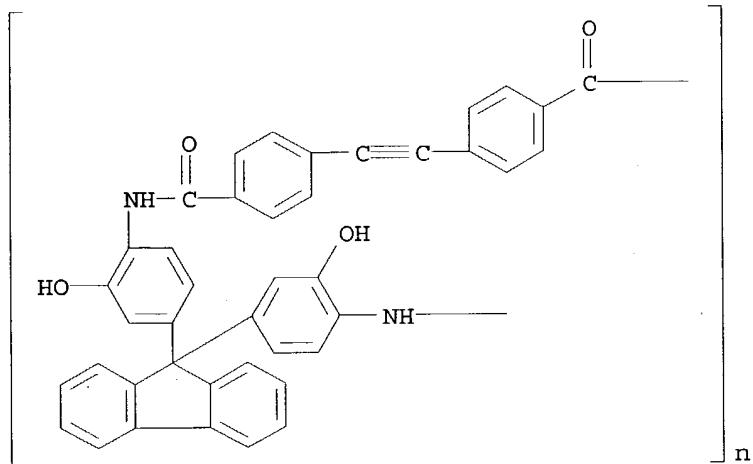
RN 582294-76-6 CAPLUS

CN Poly[iminocarbonyl-2,7-biphenylenediylcarbonylimino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



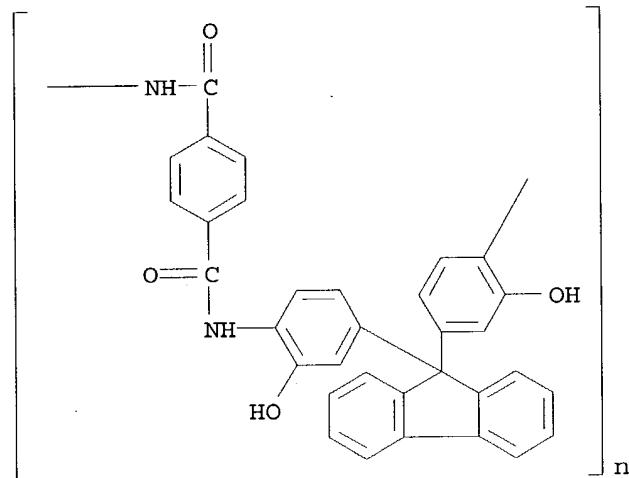
RN 582294-78-8 CAPLUS

CN Poly[iminocarbonyl-2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene) iminocarbonyl-1,4-phenylene-1,2-ethynediyl-1,4-phenylene carbonyl] (9CI) (CA INDEX NAME)



RN 582294-79-9 CAPLUS

CN Poly[iminocarbonyl-1,4-phenylenecarbonylimino(2-hydroxy-1,4-phenylene)-9H-fluoren-9-ylidene(3-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



IC ICM C08J009-04

ICS C08G069-32; H01L021-312; C08L077-06

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 74, 76

ST **polybenzoxazole** porous film low permittivity prep; polyamide cyclization condensation **polybenzoxazole** prep oligomer pyrolysis; polyoxyalkylene oligomer polyamide soln solvent casting; **semiconductor** device **polybenzoxazole** dielec film

IT Polyoxyalkylenes, uses

RL: NUU (Other use, unclassified); USES (Uses)

(oligomer; preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT Polyoxyalkylenes, processes
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process)
(polyamide-, block, polyamide-oligomer copolymer; preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT Polyamides, processes
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process)
(polyoxyalkylene-, block, polyamide-oligomer copolymer; preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT Dielectric films
Semiconductor devices
(preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT Polyoxyalkylenes, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process)
(preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT **Polybenzoxazoles**
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT 9046-10-0, Polypropylene glycol bis(2-aminopropyl ether)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process)
(oligomer; preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT 25322-69-4
RL: NUU (Other use, unclassified); USES (Uses)
(oligomer; preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT 582294-71-1P 582294-72-2P 582294-73-3P 582294-74-4P
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process)
(polyamide-oligomer copolymer; preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by

solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT 582294-65-3P 582294-66-4P, 4,4'-Diamino-3,3'-dihydroxydiphenyl ether-5-phenylethynylisophthalic acid dichloride copolymer 582294-67-5P 582294-68-6P, 9,9-Bis[(4-amino-3-hydroxy)phenyl]fluorene-4,4'-tolandicarboxylic acid dichloride copolymer 582294-69-7P 582294-70-0P 582294-75-5P, 4,4'-Diamino-3,3'-dihydroxydiphenyl ether-5-phenylethynylisophthalic acid dichloride copolymer, sru 582294-76-6P 582294-78-8P, 9,9-Bis[(4-amino-3-hydroxy)phenyl]fluorene-4,4'-tolandicarboxylic acid dichloride copolymer, sru 582294-79-9P 583032-41-1P
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT 9003-11-6, Ethylene oxide-propylene oxide copolymer
RL: NUU (Other use, unclassified); USES (Uses) (preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal)

IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses
RL: NUU (Other use, unclassified); USES (Uses) (preparation of low-k porous **polybenzoxazole** films for **semiconductor** devices by solvent casting of polyamide-oligomer blends, followed with oligomer removal by exposure to vapor of)

L154 ANSWER 12 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

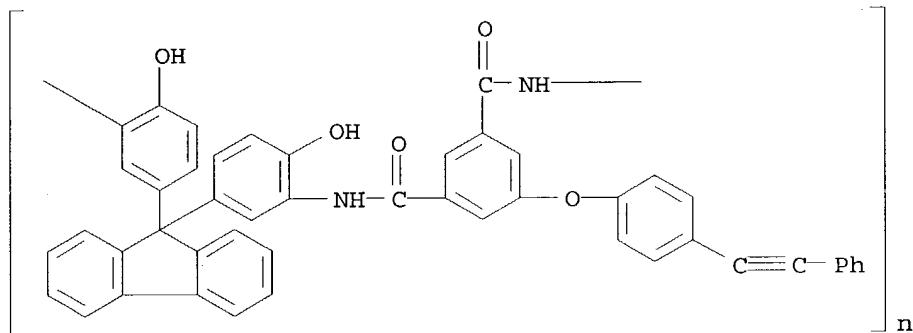
ACCESSION NUMBER: 2003:671152 CAPLUS
DOCUMENT NUMBER: 139:189377
TITLE: Heat-resistant **polybenzoxazole** precursors with excellent moldability, **polybenzoxazoles**, and dielectric materials and **semiconductor** devices using them
INVENTOR(S): Ishida, Yuichi; Enoki, Naoshi
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003238685	A2	20030827	JP 2002-40743	20020218
PRIORITY APPLN. INFO.:	JP 2002-40743 20020218			
AB	The precursors, showing good solubility in organic solvents, have units $[NHX(OH)2NHC:OY:O]_m[NHX(OH)2NHC:OZC:O]_n$ [X = tetravalent aromatic group; Y = Q1OQ2C.tplbond.CX2; Q1 = benzenetriyl; Q2 = phenylene; X2 = H, aryl, aromatic group; Z = divalent aromatic group; m > 0; n ≥ 0; m + n = 2-1000; m/(m + n) = 0.5-1].			
IT	581106-85-6P RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)			

(crosslinked; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

RN 581106-85-6 CAPLUS

CN Poly[iminocarbonyl[5-[4-(phenylethynyl)phenoxy]-1,3-phenylene]carbonylimino(6-hydroxy-1,3-phenylene)-9H-fluoren-9-ylidene(4-hydroxy-1,3-phenylene)] (9CI) (CA INDEX NAME)



IC ICM C08G073-22

ICS C08J005-18; H01L021-312; C08L079-08

CC 76-3 (Electric Phenomena)

Section cross-reference(s) : 38

ST heat resistance **polybenzoxazole** precursor interlayer dielec; **polybenzoxazole** precursor ethynylphenoxy group crosslinking **semiconductor**; **semiconductor** device phenylethynylphenoxyisophthalic **polybenzoxazole** precursor solv

IT Polyamides, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(aromatic, fluorine- and hydroxy-containing, precursors; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Polyamides, preparation

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(aromatic, hydroxy-containing, precursors; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT **Polybenzoxazoles**

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinked; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Heat-resistant materials

(films; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT **Polybenzoxazoles**

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorine-containing, crosslinked; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Dielectric films
Semiconductor devices
(heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Films
(heat-resistant; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-, aromatic, hydroxy-containing, precursors; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-, hydroxy-containing, aromatic, precursors; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Fluoropolymers, properties
Polyethers, properties
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole**-, crosslinked; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-, crosslinked; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyether-, hydroxy-containing, aromatic, precursors; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

IT 581106-78-7P, 3,3'-Diamino-4,4'-dihydroxybiphenyl-5-[4-(2-phenylethynyl)phenoxy]isophthalic dichloride copolymer 581106-79-8P
581106-80-1P 581106-81-2P 581106-82-3P 581106-83-4P 581106-84-5P
581106-85-6P 581106-86-7P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(crosslinked; heat-resistant **polybenzoxazole** precursors having ethynylphenoxy groups with good solubility in organic solvents for dielec. films for **semiconductor** devices)

L154 ANSWER 13 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:298646 CAPLUS
 DOCUMENT NUMBER: 138:328986
 TITLE: High-temperature-**resistant** deep-UV-sensitive **photoresist composition** for forming dielectric or buffer layer in microelectronics
 INVENTOR(S): Recai, Sezi
 PATENT ASSIGNEE(S): Infineon Technologies AG, Germany
 SOURCE: Ger. Offen., 16 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10145472	A1	20030417	DE 2001-10145472	20010914
US 2003087190	A1	20030508	US 2002-244280	20020916

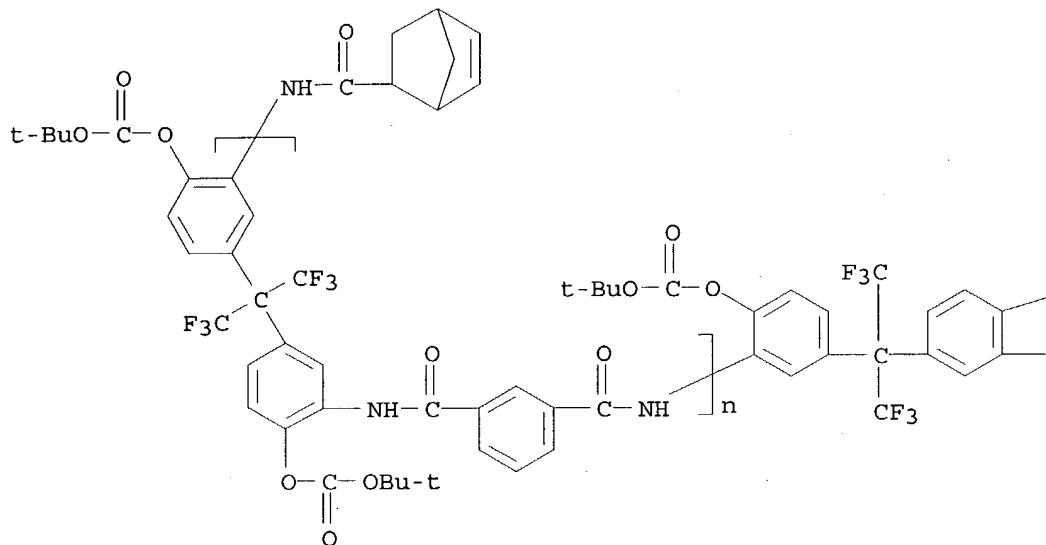
PRIORITY APPLN. INFO.: DE 2001-10145472 A 20010914

AB The title **photoresist composition** comprises a poly-o-hydroxyamide with tert-butoxycarbonyl groups -COOCR₃R₄R₅ (R₃-5 = -H, -F, -(CH₂)_nCH₃, -(CF₂)_nCF₃; n = 0-10) as protective groups, a photoacid, and mixed solvents. The **photoresist composition** shows high photosensitivity to 248 nm light exposure compared to a conventional **photoresist composition** without the above protective groups. After the cyclization conversion of poly-o-hydroxyamide into **polybenzoxazole**, the new **photoresist composition** shows surprisingly a smaller dielec. constant than the conventional **photoresist composition** without the protective groups.

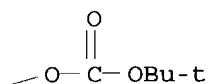
IT 512172-65-5P
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 (poly-o-hydroxyamide in high-temperature-**resistant** **photoresist composition** for forming dielec. or buffer layer in microelectronics)

RN 512172-65-5 CAPLUS
 CN Poly[iminocarbonyl-1,3-phenylenecarbonylimino[6-[[1,1-dimethylethoxy]carbonyl]oxy]-1,3-phenylene][2,2,2-trifluoro-1-(trifluoromethyl)ethylidene][4-[[1,1-dimethylethoxy]carbonyl]oxy]-1,3-phenylene], α -[5-[1-[3-[(bicyclo[2.2.1]hept-5-en-2-ylcarbonyl)amino]-4-[[1,1-dimethylethoxy]carbonyl]oxy]phenyl]-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2-[[1,1-dimethylethoxy]carbonyl]oxy]phenyl]- ω -[(bicyclo[2.2.1]hept-5-en-2-ylcarbonyl)amino]- (9CI) (CA INDEX NAME)

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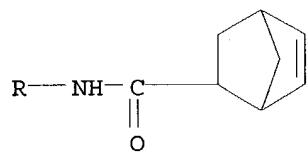


PAGE 1-B



— R

PAGE 2-A



IC ICM G03F007-038
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
ST photoresist compn poly ortho hydroxyamide deep UV
microelectronic polybenzoxazole

IT **Photoresists**
(UV; high-temperature-resistant photoresist compn
. for forming dielec. or buffer layer in microelectronics)

IT **Polybenzoxazoles**
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(acrylic; in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT **Polybenzoxazoles**
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(cardo, fluorine-containing; polybenzoxazole in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT **Electric insulators**
Heat-resistant materials
Microelectronic devices
(high-temperature-resistant photoresist composition
for forming dielec. or buffer layer in microelectronics)

IT **Polyesters, processes**
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyamide-, fluorine-containing; poly-o-hydroxyamide in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT **Fluoropolymers, processes**
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyamide-polyester-; poly-o-hydroxyamide in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT **Polyethers, processes**
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazole-, cardo; polybenzoxazole in high-temperature-resistant photoresist composition
for forming dielec. or buffer layer in microelectronics)

IT **Polyethers, processes**
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazole-, fluorine-containing; polybenzoxazole in high-temperature-resistant photoresist compn
. for forming dielec. or buffer layer in microelectronics)

IT **Cardo polymers**
Fluoropolymers, processes
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazole-polyether-; polybenzoxazole in

high-temperature-resistant photoresist composition
for forming dielec. or buffer layer in microelectronics)

IT Cardo polymers
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazoles, fluorine-containing; polybenzoxazole
in high-temperature-resistant photoresist compn
. for forming dielec. or buffer layer in microelectronics)

IT Polyamides, processes
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyester-, fluorine-containing; poly-o-hydroxyamide in high-temperature-resistant photoresist composition for forming
dielec. or buffer layer in microelectronics)

IT Polybenzoxazoles
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyether-, cardo; polybenzoxazole in high-temperature-resistant photoresist composition for forming
dielec. or buffer layer in microelectronics)

IT Polybenzoxazoles
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyether-, fluorine-containing; polybenzoxazole in high-temperature-resistant photoresist composition for forming
dielec. or buffer layer in microelectronics)

IT 108-31-6DP, Maleic acid anhydride, reaction products with fluorine-containing
polybenzoxazole-polyethers 72123-18-3P 512172-70-2P
512172-71-3DP, reaction products with maleic acid anhydride 512172-72-4P
512172-73-5P
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(in high-temperature-resistant photoresist compn
. for forming dielec. or buffer layer in microelectronics)

IT 1886-74-4 4450-68-4 41580-58-9 57840-38-7, Triphenylsulfonium
hexafluoroantimonate 84563-54-2
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(photoacid in high-temperature-resistant photoresist
composition for forming dielec. or buffer layer in microelectronics)

IT 920-46-7DP, Methacrylic acid chloride, reaction products acrylic
polybenzoxazoles 27063-48-5DP, reaction products with
fluorine-containing polyester-polyamides 512172-64-4DP, norbornenecarboxylic
acid terminated 512172-65-5P 512172-67-7DP, methacrylic acid
terminated
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(poly-o-hydroxyamide in high-temperature-resistant

**photoresist composition for forming dielec. or buffer
layer in microelectronics)**

L154 ANSWER 14 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:298645 CAPLUS
DOCUMENT NUMBER: 138:328985
TITLE: **High-temperature-resistant
photoresist composition for forming
dielectric or buffer layer in microelectronics**
INVENTOR(S): Sezi, Recai
PATENT ASSIGNEE(S): Infineon Technologies AG, Germany
SOURCE: Ger. Offen., 18 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10145471	A1	20030417	DE 2001-10145471	20010914
US 2003099904	A1	20030529	US 2002-244257	20020916

PRIORITY APPLN. INFO.: DE 2001-10145471 A 20010914

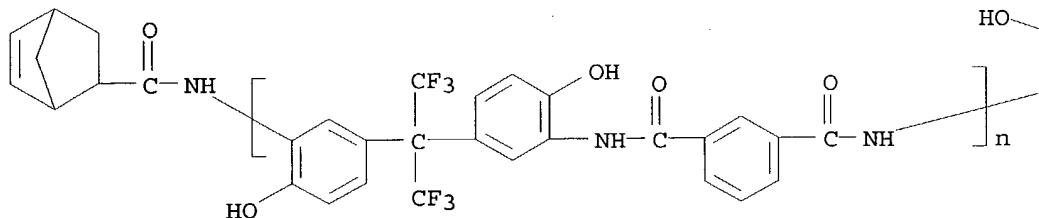
AB The title **photoresist composition** comprises a poly-o-hydroxyamide with free hydroxy groups, a dissoln. inhibitor, a photoacid, and a polar solvent. The **photoresist compn** shows high photosensitivity compared to a conventional quinone azide based **photoresist composition**. After the cyclization conversion of poly-o-hydroxyamide into **polybenzoxazole**, the new **photoresist composition** shows surprisingly a smaller dielec. constant than the conventional quinone azide based **photoresist composition**

IT 512173-65-8P
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(poly-o-hydroxyamide in **high-temperature-resistant
photoresist composition** for forming dielec. or buffer layer in microelectronics)

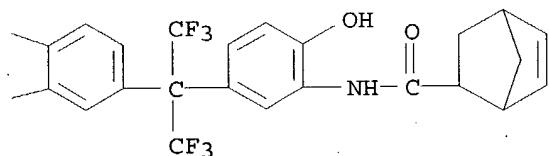
RN 512173-65-8 CAPLUS

CN Poly[iminocarbonyl-1,3-phenylenecarbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)], α -[5-[1-[3-[(bicyclo[2.2.1]hept-5-en-2-ylcarbonyl)amino]-4-hydroxyphenyl]-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2-hydroxyphenyl]- ω -[(bicyclo[2.2.1]hept-5-en-2-ylcarbonyl)amino]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM G03F007-038
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 76
 ST photoresist compn poly ortho hydroxyamide dielec
 buffer microelectronic polybenzoxazole
 IT **Polybenzoxazoles**
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 (acrylic; in high-temperature-resistant photoresist
 composition for forming dielec. or buffer layer in microelectronics)
 IT **Polybenzoxazoles**
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 (cardo, fluorine-containing; polybenzoxazole in high-temperature-
 resistant photoresist composition for forming
 dielec. or buffer layer in microelectronics)
 IT Electric insulators
 Heat-resistant materials
 Microelectronic devices
Photoresists
 (high-temperature-resistant photoresist composition
 for forming dielec. or buffer layer in microelectronics)
 IT Polyvinyl butyrals
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (in high-temperature-resistant photoresist compn
 . for forming dielec. or buffer layer in microelectronics)
 IT Polyesters, processes
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical,

engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyamide-, fluorine-containing; poly-o-hydroxyamide in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT Fluoropolymers, processes
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyamide-polyester-; poly-o-hydroxyamide in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT Polyethers, processes
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazole-, cardo; polybenzoxazole in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT Polyethers, processes
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazole-, fluorine-containing; polybenzoxazole in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT Cardo polymers
Fluoropolymers, processes
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazole-polyether-; polybenzoxazole in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT Cardo polymers
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polybenzoxazoles, fluorine-containing; polybenzoxazole in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT Polyamides, processes
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyester-, fluorine-containing; poly-o-hydroxyamide in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT Polybenzoxazoles
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyether-, cardo; polybenzoxazole in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT **Polybenzoxazoles**

RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(polyether-, fluorine-containing; **polybenzoxazole** in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT 774-65-2 1886-74-4 4450-68-4 5551-72-4 35343-63-6, tert-Butyl methacrylate-methacrylic acid copolymer 41580-58-9 57840-38-7, Triphenylsulfonium hexafluoroantimonate 84563-54-2 87188-51-0, p-tert-Butoxycarbonyloxyxystyrene 145531-11-9 380848-50-0 512173-70-5
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(in high-temperature-resistant photoresist compn
. for forming dielec. or buffer layer in microelectronics)

IT 27063-48-5DP, reaction products with fluorine-containing polyester-polyamides 112492-59-8DP, norbornenecarboxylic acid terminated 512173-65-8P
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(poly-o-hydroxyamide in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT 98-88-4DP, Benzoic acid chloride, reaction products with fluorine-containing cardo **Polybenzoxazoles** 108-31-6DP, Maleic acid anhydride, reaction products with fluorine-containing **Polybenzoxazole**-polyethers 920-46-7DP, Methacrylic acid chloride, reaction products with acrylic **Polybenzoxazole** 512172-72-4DP, methacrylic acid terminated 512173-67-0P 512173-68-1DP, reaction products with maleic anhydride 512173-69-2DP, benzoic chloride terminated
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(**Polybenzoxazole** in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

IT 56-55-3, 1,2-Benzanthracene 120-12-7, Anthracene, processes 198-55-0, Perylene
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(sensitizer in high-temperature-resistant photoresist composition for forming dielec. or buffer layer in microelectronics)

L154 ANSWER 15 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:274807 CAPLUS

DOCUMENT NUMBER: 138:288731

TITLE: **Polybenzoxazole** precursors, their condensed crosslinked **Polybenzoxazoles**, insulating films, and **semiconductor** devices

INVENTOR(S): Ishida, Yuichi; Enoki, Naoshi

PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003105086	A2	20030409	JP 2001-302665	20010928
PRIORITY APPLN. INFO.:			JP 2001-302665	20010928

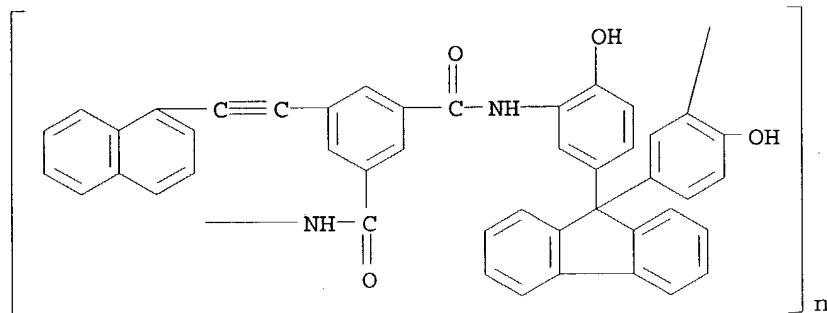
AB The **polybenzoxazole** precursors comprise
 $[HN(X(OH)2NHCOYCO)m[HN(Y(OH)2NHCOZCO)n]$ [X = (substituted) tetravalent benzene derivative group; Y = (substituted) naphthylethynyl-containing divalent benzene derivative; Z = (substituted) benzene derivative or cyclohexane derivative; m > 0; n ≥ 0; (m + n) = 2-1000; m/(m + n) = 0.05-1]. Thus, polymerization of 3,3'-diamino-4,4'-dihydroxybiphenyl and 5-(1-naphthylethynyl)isophthalic acid dichloride gave a copolymer with Mn 7000, which was dissolved in N-methyl-2-pyrrolidone, applied on a glass plate, and baked to give a crosslinked **polybenzoxazole** film with dielec. constant 3.15, Tg >450°, and 5% weight loss temperature 524°.

IT 505059-50-7P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(**polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)

RN 505059-50-7 CAPLUS

CN Poly[iminocarbonyl [5-(1-naphthalenylethynyl)-1,3-phenylene]carbonylimino(6-hydroxy-1,3-phenylene)-9H-fluoren-9-ylidene(4-hydroxy-1,3-phenylene)] (9CI) (CA INDEX NAME)



IC ICM C08G073-22
 ICS C08J005-18; H01L021-312; C08L079-04
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 76
 ST **polybenzoxazole** precursor polyamide insulating film
 semiconductor crosslinking; aminohydroxybiphenyl naphthylethynyl isophthaloyl chloride **polybenzoxazole** heat resistance
 IT **Polybenzoxazoles**
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (cardo, crosslinked; **polybenzoxazole** precursors and their

- condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(cardo; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinked; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Heat-resistant materials
(films; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorine-containing, crosslinked; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(fluorine-containing; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Films
(heat-resistant; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Fluoropolymers, preparation
Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Cardo polymers
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamides; **polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Dielectric films
Semiconductor devices
(**polybenzoxazole** precursors and their condensed crosslinked **polybenzoxazoles** for insulating films with good heat resistance)
- IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

IT Fluoropolymers, uses
Polyethers, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole-, crosslinked; polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

IT Cardo polymers
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazoles, crosslinked; polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

IT Polybenzoxazoles
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-, crosslinked; polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyether-; polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

IT 505059-42-7P 505059-45-0P 505059-48-3P 505059-51-8P 505059-52-9P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinked; polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

IT 505059-41-6P 505059-44-9P 505059-47-2P 505059-50-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

IT 505059-40-5P 505059-43-8P 505059-46-1P 505059-49-4P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polybenzoxazole precursors and their condensed crosslinked polybenzoxazoles for insulating films with good heat resistance)

L154 ANSWER 16 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:271760 CAPLUS
DOCUMENT NUMBER: 138:288676
TITLE: Polybenzoxazole precursors and their condensate organic insulating films with good heat resistance
INVENTOR(S): Hase, Yoko
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003105085	A2	20030409	JP 2001-298562	20010927
PRIORITY APPLN. INFO.:			JP 2001-298562	20010927

AB The films, useful for **semiconductor** devices, etc., are manufactured by condensation of **polybenzoxazole** precursors (CONHX(OH)2NHCY)n [X = substituted tetravalent benzene derivative group; Y = (substituted) divalent benzene derivative; n = 2-1000] prepared from bulky diaminophenols X(NH)2(OH)2 and bulky dicarboxylic acids Y(CO2H)2 (X, Y = same as the above). Thus, polymerization of 9,9-bis-[2-methyl-5-cyclohexyl-4-[(4-amino-3-hydroxy)phenoxy]phenyl]fluorene and 5-tert-butyliophthalic acid dichloride gave a copolymer with Mn 7.0 + 103 and Mw 1.36 + 104, which was dissolved in N-methyl-2-pyrrolidone, applied on a silicon wafer, dried, and baked to give a **polybenzoxazole** film with d. 1.17 g/cm3, dielec. constant 2.64, and 5% weight loss temperature 469°.

IT 505072-96-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(**polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)

RN 505072-96-8 CAPLUS

CN Poly[oxy(2-cyclohexyl-5-methyl-1,4-phenylene)-9H-fluoren-9-ylidene(5-cyclohexyl-2-methyl-1,4-phenylene)oxy(3-hydroxy-1,4-phenylene)iminocarbonyl[5-(1,1-dimethylethyl)-1,3-phenylene]carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

IC ICM C08G073-22
ICS H01L021-312

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76

ST **polybenzoxazole** precursor polyamide insulating film bulky; heat resistance film **polybenzoxazole** polyether cardo **semiconductor**; methylcyclohexyl aminohydroxyphenoxyphenyl fluorene butylisophthaloyl chloride **polybenzoxazole**

IT Heat-resistant materials
(films; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)

IT Films
(heat-resistant; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)

- IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-, cardo; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-, fluorene group-containing, cardo; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Polyethers, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Cardo polymers
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyethers, fluorene group-containing; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Cardo polymers
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyethers; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Dielectric films
Semiconductor devices
(**polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Polyethers, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole**-, cardo; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Polyethers, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole**-; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Cardo polymers
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole**-polyether-; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyether-, cardo; **polybenzoxazole** precursors and their condensate organic insulating films with good heat resistance)
- IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)
(polyether-, cardo; **polybenzoxazole** precursors and their
condensate organic insulating films with good heat resistance)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(polyether-, fluorene group-containing, cardo; **polybenzoxazole**
precursors and their condensate organic insulating films with good heat
resistance)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(polyether-; **polybenzoxazole** precursors and their condensate
organic insulating films with good heat resistance)

IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(polyether-; **polybenzoxazole** precursors and their condensate
organic insulating films with good heat resistance)

IT 505072-96-8P 505073-00-7P 505073-04-1P 505073-11-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(**polybenzoxazole** precursors and their condensate organic
insulating films with good heat resistance)

IT 505072-95-7P 505072-97-9P 505072-99-1P 505073-01-8P 505073-03-0P
505073-06-3P 505073-09-6P 505073-13-2P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(**polybenzoxazole** precursors and their condensate organic
insulating films with good heat resistance)

L154 ANSWER 17 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:36496 CAPLUS
DOCUMENT NUMBER: 138:91053
TITLE: Materials for organic insulating films and organic
insulating films having low dielectric constants and
good heat resistance
INVENTOR(S): Hase, Yoko; Katsumura, Akifumi
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003012802	A2	20030115	JP 2001-195833	20010628
PRIORITY APPLN. INFO.:			JP 2001-195833	20010628
AB	Diaminophenols react with bulky dicarboxylic acids to give polybenzoxazole precursors, which are dehydrated and condensed to form films. Thus, 5.65 parts 9,9-bis-{4-((4-amino-3-hydroxy)phenoxy-3- phenyl)phenyl}fluorene reacted with 2.06 parts 5-methylisophthalic acid dichloride to give a precursor, which was coated on a Si wafer and heated			

to form an insulating coating.

IT 484066-53-7P 484066-56-0P 484066-59-3P

484066-63-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polybenzoxazoles for insulating films having low dielec.
consts. and good heat resistance)

RN 484066-53-7 CAPLUS

CN Poly[oxy[1,1'-biphenyl]-2,5-diyl-9H-fluoren-9-ylidene[1,1'-biphenyl]-5,2-diyoxy(3-hydroxy-1,4-phenylene)iminocarbonyl(5-methyl-1,3-phenylene)carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

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RN 484066-56-0 CAPLUS

CN Poly[oxy[1,1'-biphenyl]-2,5-diyl-9H-fluoren-9-ylidene[1,1'-biphenyl]-5,2-diyoxy(3-hydroxy-1,4-phenylene)iminocarbonyl[5-(1,1-dimethylethyl)-1,3-phenylene]carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 484066-59-3 CAPLUS

CN Poly[oxy[1,1'-biphenyl]-2,5-diyl-9H-fluoren-9-ylidene[1,1'-biphenyl]-5,2-diyoxy(3-hydroxy-1,4-phenylene)iminocarbonyl[5-(trimethylsilyl)-1,3-phenylene]carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 484066-63-9 CAPLUS

CN Poly[oxy[1,1'-biphenyl]-2,5-diyl-9H-fluoren-9-ylidene[1,1'-biphenyl]-5,2-diyoxy(3-hydroxy-1,4-phenylene)iminocarbonyl(5-tricyclo[3.3.1.13,7]dec-1-yl-1,3-phenylene)carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

IC ICM C08G073-22
ICS C08J005-18; H01B003-30; C08L079-04
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
ST **polybenzoxazole** elec insulator silicon wafer;
aminohydroxyphenoxyphenylphenylfluorene methylisophthalic acid dichloride
copolymer elec insulator; aminophenol carboxylic acid copolymer
IT Amines, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(diamines, phenols, polymers with bulky dicarboxylic acids;
polybenzoxazoles for insulating films having low dielec.
consts. and good heat resistance)
IT Phenols, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(diamino-, polymers with dicarboxylic acids; **polybenzoxazoles**
for insulating films having low dielec. consts. and good heat
resistance)
IT Carboxylic acids, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(dicarboxylic, polymers with diaminophenols; **polybenzoxazoles**
for insulating films having low dielec. consts. and good heat
resistance)
IT Coating materials
(heat-resistant; **polybenzoxazoles** for insulating films having
low dielec. consts. and good heat resistance)
IT Cyclization
Dehydration reaction
Electric insulators
Polymerization
(**polybenzoxazoles** for insulating films having low dielec.
consts. and good heat resistance)
IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazoles** for insulating films having low dielec.
consts. and good heat resistance)
IT **Semiconductor** devices
(wafers; **polybenzoxazoles** for insulating films having low
dielec. consts. and good heat resistance)
IT 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)
(**polybenzoxazoles** for insulating films having low dielec.
consts. and good heat resistance)
IT 484066-52-6P 484066-54-8P 484066-55-9P 484066-57-1P 484066-58-2P
484066-60-6P 484066-62-8P 484066-64-0P 484066-65-1P 484066-67-3P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)

(polybenzoxazoles for insulating films having low dielec.
consts. and good heat resistance)

IT 484066-53-7P 484066-56-0P 484066-59-3P
484066-63-9P 484066-66-2P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)

(polybenzoxazoles for insulating films having low dielec.
consts. and good heat resistance)

L154 ANSWER 18 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:978475 CAPLUS

DOCUMENT NUMBER: 138:57579

TITLE: Composition and process for the production of a porous
layer on substrates using the composition

INVENTOR(S): Sezi, Recai

PATENT ASSIGNEE(S): Germany

SOURCE: U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002198277	A1	20021226	US 2002-180438	20020626
DE 10130601	A1	20030109	DE 2001-10130601	20010626

PRIORITY APPLN. INFO.: DE 2001-10130601 A 20010626

AB Production of a porous layer on a substrate includes using a composition which includes a first polymer component and a second polymer component (such as polycarbonates, polyacetals, aliphatic polyethers, and polyesters), the first polymer component being polyhydroxyamide and/or **polybenzoxazole** and stable at a temperature at which the second polymer component decomp. and volatilizes. When the composition is heated to the decomposition temperature of the

second polymer component, the second component volatilizes and a porous layer that contains the first component remains.

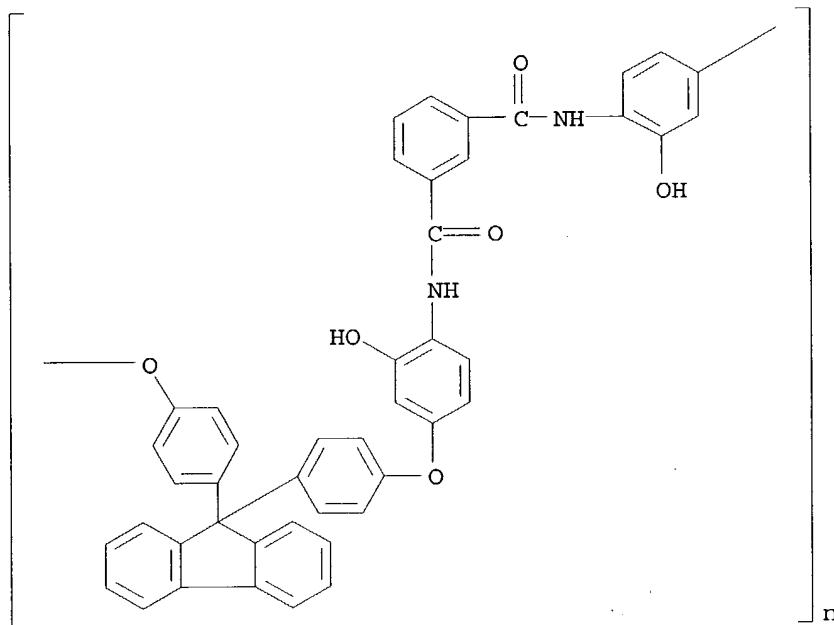
IT 479070-82-1P

RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(component with higher thermal stability; production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)

RN 479070-82-1 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,3-phenylene carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



IC ICM C08J009-00

NCL 521134000

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 76

ST porous polyhydroxyamide elec insulating coating; **polybenzoxazole**
porous elec insulating coating; polycarbonate volatilizable component
porous coating manuf; polyester volatilizable component porous coating
manuf; aliph polyether volatilizable component porous coating manuf;
polyacetal volatilizable component porous coating manuf; dielec porous
film **polybenzoxazole**

IT Polyethers, uses

RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); POF (Polymer in formulation); PROC (Process); USES (Uses)
(aliphatic, component with lower thermal stability; production of porous
elec.

insulating coatings by heating blends containing polymers that volatilize
at lower temps. than other polymers in blends on substrates)

IT Electric insulators

Porous materials

(coatings; production of porous elec. insulating coatings by heating blends
containing polymers that volatilize at lower temps. than other polymers in
blends on substrates)

IT **Polybenzoxazoles**

RL: TEM (Technical or engineered material use); USES (Uses)
(component with higher thermal stability; production of porous elec.
insulating coatings by heating blends containing polymers that volatilize
at lower temps. than other polymers in blends on substrates)

IT Polyesters, uses

RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); POF (Polymer in formulation); PROC (Process); USES (Uses)
(component with lower thermal stability; production of porous elec.
insulating coatings by heating blends containing polymers that volatilize

- IT at lower temps. than other polymers in blends on substrates)
- IT Polycarbonates, uses
 - RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 - (component with lower thermal stability; production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)
- IT Polyamides, uses
 - RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 - (hydroxy-containing, component with higher thermal stability; production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)
- IT Dielectric films
 - (porous; production of porous dielec. films by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)
- IT Coating materials
 - (porous; production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)
- IT Polyoxymethylenes, uses
 - RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)
 - (production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)
- IT 479070-81-0DP, carboxy-terminated 479070-82-1P
 - RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
 - (component with higher thermal stability; production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)
- IT 9046-10-0, Polypropylene glycol bis(2-aminopropyl ether)
 - RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)
 - (component with lower thermal stability; production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)
- IT 479070-83-2P
 - RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 - (production of porous elec. insulating coatings by heating blends containing polymers that volatilize at lower temps. than other polymers in blends on substrates)

hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides

AUTHOR(S) : Imai, Yoshio; Shibusaki, Yuji; Takeuchi, Hisashi; Park, Ki Hong; Kakimoto, Masa-Aki

CORPORATE SOURCE: Department of Organic and Polymeric Materials, Tokyo Institute of Technology, Tokyo, 152, Japan

SOURCE: High Performance Polymers (2002), 14(3), 253-260

CODEN: HPPOEX; ISSN: 0954-0083

PUBLISHER: Sage Publications

DOCUMENT TYPE: Journal

LANGUAGE: English

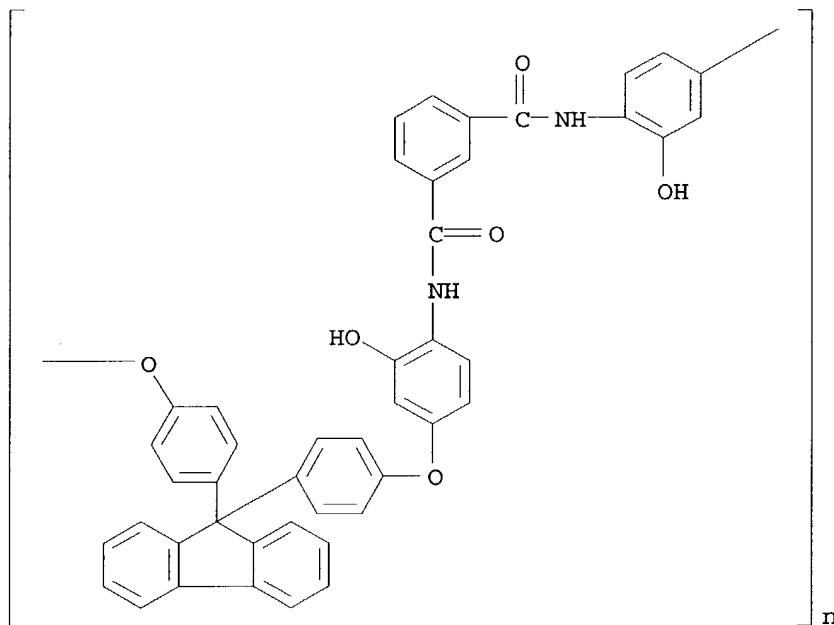
AB An ether-containing bis(o-aminophenol) monomer having a bulky diphenylfluorene unit, 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene, was synthesized by the reaction of 9,9-bis(4-hydroxyphenyl)fluorene with 2-benzylxy-4-fluoronitrobenzene giving a bis-nitrobenzene compound, followed by catalytic reduction Diphenylfluorene-containing aromatic poly(ether benzoxazole)s (PEBOs) having inherent viscosities of 0.57-0.74 dL g-1 were obtained in two steps by the polycondensation of the bis(o-aminophenol) with various aromatic dicarboxylic acid chlorides giving precursor poly(ether o-hydroxyamide)s, and subsequent thermal cyclodehydration. These aromatic PEBOs were soluble on heating in N-methyl-2-pyrrolidone and m-cresol. The glass transition temps. and 10% weight loss temps. of the PEBOs were in the ranges of 258-294°C and 560-580°C, resp., in nitrogen.

IT 479070-82-1P 488838-66-0P 488838-71-7P
488838-73-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

RN 479070-82-1 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,3-phenylenecarbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



RN 488838-66-0 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 488838-71-7 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

RN 488838-73-9 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenylenesulfonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

CC 35-5 (Chemistry of Synthetic High Polymers)

ST bisaminophenol deriv dicarboxylic chloride synthesis diphenylfluorene
contg polyether **polybenzoxazole**; sol thermal property polyether
polybenzoxazole

IT Glass transition temperature

Solubility

Thermal stability

Viscosity

(of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polyethers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamide-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polysulfones, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamide-polyether-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Cardo polymers

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamide-polyether-polysulfones, aromatic, fluorene group-containing; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Cardo polymers

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamide-polyethers, aromatic, fluorene group-containing; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polyethers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyamide-polysulfone-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polyethers, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**polybenzoxazole**-, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polysulfones, preparation

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(polybenzoxazole-polyether-, aromatic; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Cardo polymers
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polybenzoxazole-polyether-, synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polyethers, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polybenzoxazole-polysulfone-, aromatic; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polyamides, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyether-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polybenzoxazoles
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyether-, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polyamides, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyether-polysulfone-, aromatic, fluorene group-containing, cardo; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT Polybenzoxazoles
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(polyether-polysulfone-, aromatic; synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

IT 3236-71-3, 9,9-Bis(4-hydroxyphenyl)fluorene
RL: RCT (Reactant); RACT (Reactant or reagent)
(in reaction with benzylxyfluoronitrobenzene)

IT 129464-01-3P, 2-Benzylxy-4-fluoronitrobenzene
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(in reaction with bishydroxyphenylfluorene)

IT 359820-18-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer intermediate; preparation of, and in reduction reaction)

IT 359642-31-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; preparation of by reduction reaction, and in polymerization)

IT 359642-35-6P 359642-37-8P 359862-18-3P 479070-81-0P
479070-82-1P 479070-83-2P 488838-66-0P 488838-69-3P

488838-71-7P 488838-72-8P 488838-73-9P 488838-74-0P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(synthesis and properties of soluble aromatic poly(ether benzoxazole)s from 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene and aromatic dicarboxylic acid chlorides)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L154 ANSWER 20 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:734108 CAPLUS

DOCUMENT NUMBER: 137:270521

TITLE: Positive-working **photoresist** polyimide precursor resin **composition**

INVENTOR(S): Fujita, Yoji; Suwa, Atsushi; Tomikawa, Masao

PATENT ASSIGNEE(S): Toray Industries, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002278061	A2	20020927	JP 2001-80320	20010321

PRIORITY APPLN. INFO.: JP 2001-80320 20010321

AB The title composition contains polymers and light sensitive material containing $\geq 50\%$ of light-sensitive quinonediazide derivative, wherein the polymer has main repeating unit $[CO-R1(OH)p(COOR3)m-CONH-R2(OH)q-NH]n$ ($R1 = C_{\geq 2} 2-8$ valent orgs.; $R2 = C_{\geq 2} 2-6$ valent orgs.; $R3 = H$, C_{2-20} orgs.; $n = 10-100,000$ integer; $m = 0-2$ integer; $p,q = 0-4$ integer, $p+q > 0$) and wherein the light-sensitive quinonediazide derivative is a condensation compound of ≥ 3 phenols having ≥ 3 OH groups and a quinonediazide. The **composition** provides alkali-developable **photoresists**, which are suitable for **semiconductor** device layers such as surface protecting layer, insulating layer for interlayers.

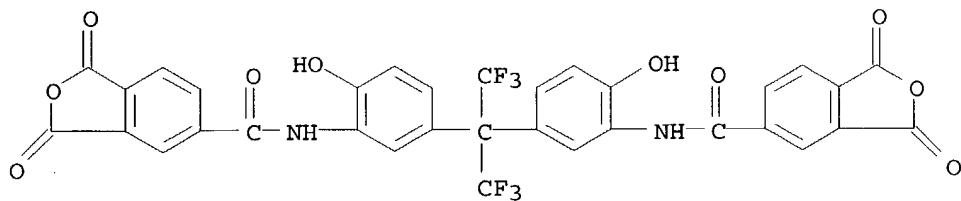
IT 223255-30-9P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working **photoresist** polyimide precursor resin **composition**)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-022
 ICS C08K005-28; C08L077-00; G03F007-037; H01L021-027
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 76
 ST pos working photoresist polyimide precursor resin compn
 IT Photoresists
 Semiconductor device fabrication
 (pos.-working photoresist polyimide precursor resin composition)
 IT 80-05-7, Bisphenol A, reactions 99-57-0, 2-Amino-4-nitrophenol
 99-63-8, Isophthalic acid chloride 122-04-3, 4-Nitrobenzoyl chloride
 135-19-3, 2-Naphthol, reactions 552-30-7, Trimellitic acid anhydride
 38638-43-6, 1,2-Naphthoquinonediazide-5-sulfonic acid chloride
 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (pos.-working photoresist polyimide precursor resin composition)
 IT 25596-69-4P 36451-09-9DP, 1,2-Naphthoquinonediazide-4-sulfonic acid chloride, reaction products with phenol derivative 37829-64-4P 38595-90-3P
 46907-17-9P 129197-38-2P 172487-19-3P 223255-30-9P
 227795-35-9P 463298-14-8P 463298-15-9P 463298-16-0P 463298-62-6P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (pos.-working photoresist polyimide precursor resin composition)

L154 ANSWER 21 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2002:688210 CAPLUS
 DOCUMENT NUMBER: 137:218085
 TITLE: Epoxy resin compositions with low water absorption, dielectric constant, and good solder-heat resistance and prepgs using them
 INVENTOR(S): Yoshida, Tatsuhiko
 PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
JP 2002256137	A2	20020911	JP 2001-55842	20010228

PRIORITY APPLN. INFO.:

JP 2001-55842

20010228

AB The prepgs for printed circuit boards comprise substrates impregnated with epoxy resin compns. containing polyamides with repeating units of $[NHX(OR1)(OR2)NHCOY1CO]_m[NHX(OR3)(OR4)NHCOY2CO]_n$ ($m > 0$; $n \geq 0$; $m + n = 2-2000$; $m/(m + n) 0.05-1$; $R1-R4 = H$, monovalent organic group; $X =$ tetravalent aromatic group; $Y1 =$ acetylenyl-substituted aromatic group, alkynyl-substituted aromatic group; divalent aromatic group; bisphenyleneacetylene; $Y2 =$ divalent aromatic or alicyclic group). Thus, a composition containing Epikote 1001 100, 4,4'-diaminodiphenylmethane 25, benzylidimethylamine 0.3, and 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4-ethynyl-2,6-naphthalenedicarboxyl chloride copolymer 20 parts was dissolved in a MEK/DMF 90/10 solvent to give a varnish, with which a glass fiber fabric was impregnated and dried to give a prepg. A Cu-clad laminated board made of 8 pieces of thus obtained prepgs were laminated and hot-pressed to give a laminated board with moisture absorption 2.2%, dielec. constant 3.2, dielec. tangent 0.003, Tg 133°, and good solder-heat resistance.

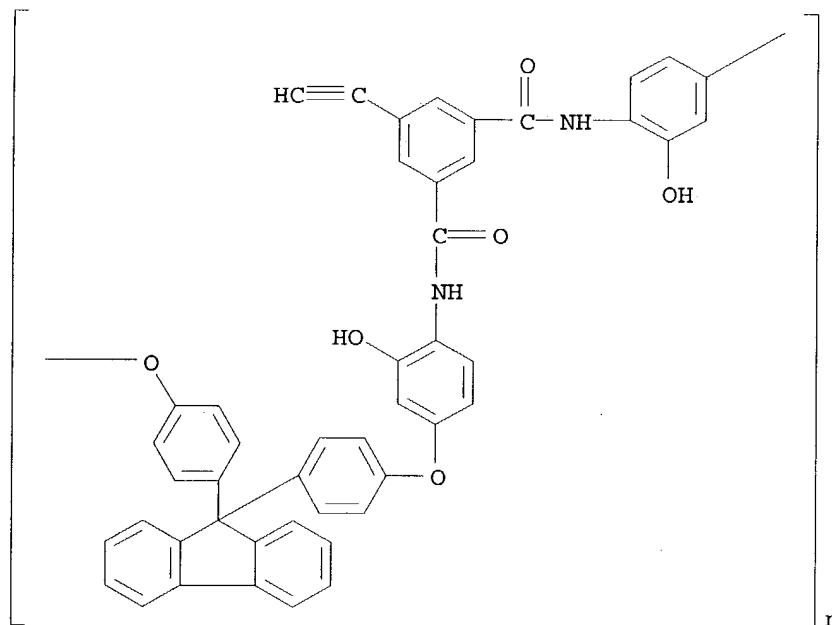
IT 457049-00-2P

RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

RN 457049-00-2 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl(5-ethynyl-1,3-phenylene)carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)



IC ICM C08L063-00

ICS C08J005-24; C08L077-06

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 76

ST epoxy resin crosslinkable alkynyl polyamide; solder heat water resistance prepreg printed circuit board; aminohydroxyphenyl fluoropropane ethynyl naphthalenedicarboxylate polymer epoxy resin prepreg

IT Electric insulators
Printed circuit boards
(epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

IT Laminated plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fiber-reinforced plastics; epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

IT Reinforced plastics
RL: TEM (Technical or engineered material use); USES (Uses)
(glass fiber-reinforced, laminates; epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

IT Water-resistant materials
(heat-resistant; epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

IT Reinforced plastics
RL: TEM (Technical or engineered material use); USES (Uses)
(prepgs; epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs)

IT Glass fiber fabrics
RL: TEM (Technical or engineered material use); USES (Uses)
(reinforcer; epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

IT Heat-resistant materials
(water-resistant; epoxy resin-polyamide compns.
with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

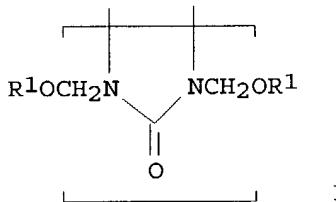
IT 450408-23-8P 457048-99-6P 457049-00-2P 457068-28-9P
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

IT 457049-01-3P 457049-02-4P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(epoxy resin-polyamide compns. with low water absorption, dielec. constant, and good solder-heat resistance for prepgs of printed circuit boards)

INVENTOR(S): Suwa, Mitsuhiro; Miyoshi, Kazuto; Tomikawa, Masao
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: PCT Int. Appl., 63 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002069041	A1	20020906	WO 2002-JP1517	20020221
W: CN, KR, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2002328472	A2	20021115	JP 2002-41308	20020219
EP 1365289	A1	20031126	EP 2002-700653	20020221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
US 2003194631	A1	20031016	US 2003-258660	20030303
PRIORITY APPLN. INFO.: JP 2001-49951 A 20010226 WO 2002-JP1517 W 20020221				

GI



AB The invention relates to a precursor composition for an alkali-developable pos. photosensitive resin. The precursor composition comprises (a) a polyamic acid ester and/or polyamic acid polymer which are soluble in an aqueous alkali solution,

(b1) a heat-crosslinkable compound which contains a phenolic hydroxyl group and a methylol group substituted by an organic group R1 (provided that R1 is not hydrogen) or (b2) a heat-crosslinkable compound which contains a urea-derived organic group substituted by organic groups R1, and (c) An esterified quinone diazide compound. The heat-crosslinkable compound in (b1) is represented by $-(-\text{CH}_2-\text{OR}_1)$ [R1 = C1-20-alkyl, R2CO; R2 = C1-20-alkyl] and the heat-crosslinkable compound in (b2) is represented by I [R1 = C1-20-alkyl, R2CO; R2 = C1-20-alkyl]. The precursor composition, showing excellent heat-resistance, is suitable as a surface protection layer and an insulator layer in a semiconductor device and in an organic electroluminescent display.

IT 236095-20-8P 264604-36-6P 455943-58-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (in heat-resistant pos. photosensitive resin precursor composition suitable for fabricating insulator layer of display)

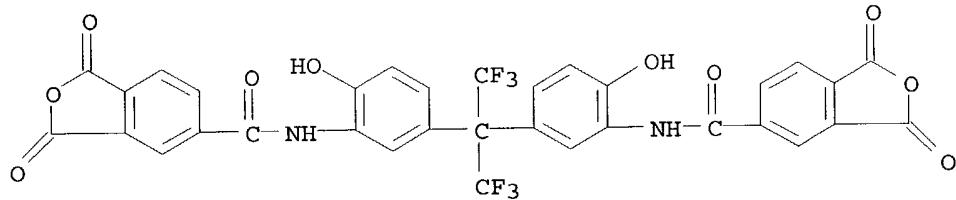
RN 236095-20-8 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyi]bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

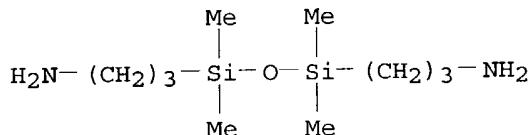
CMF C33 H16 F6 N2 O10



CM 2

CRN 2469-55-8

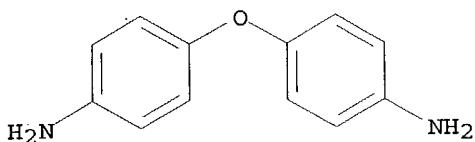
CMF C10 H28 N2 O Si2



CM 3

CRN 101-80-4

CMF C12 H12 N2 O

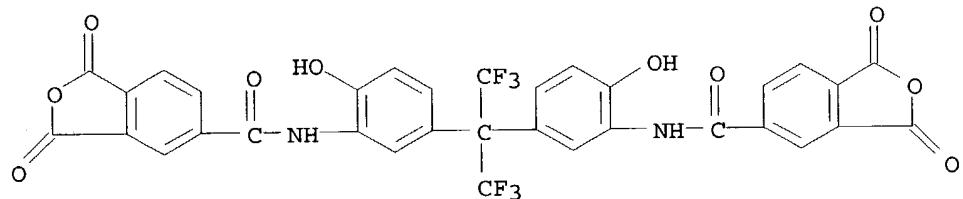


RN 264604-36-6 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[4-aminobenzamide] (9CI) (CA INDEX NAME)

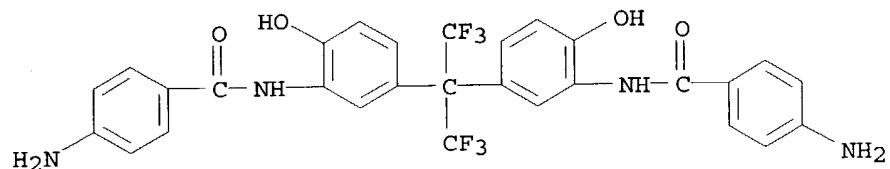
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



CM 2

CRN 129197-38-2
CMF C29 H22 F6 N4 O4

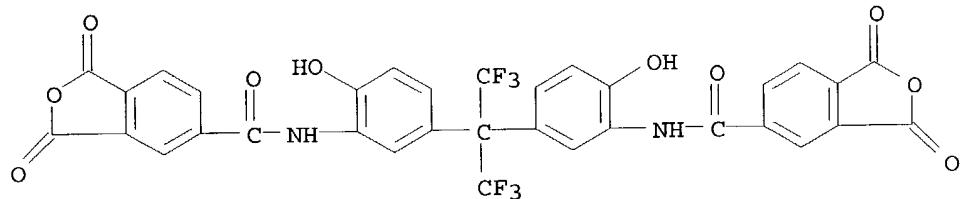


RN 455943-58-5 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 3-amino-N-(5-amino-2-hydroxyphenyl)benzamide, [5,5'-biisobenzofuran]-1,1',3,3'-tetrone, 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

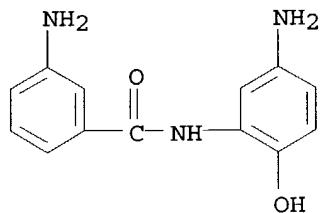
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



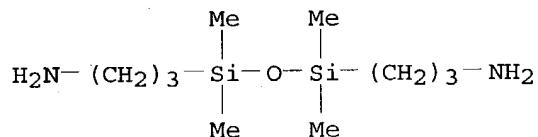
CM 2

CRN 27431-43-2
CMF C13 H13 N3 O2



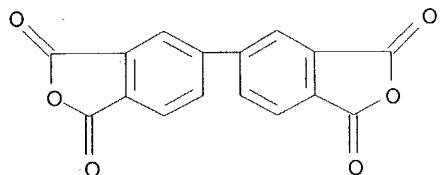
CM 3

CRN 2469-55-8
CMF C10 H28 N2 O Si2



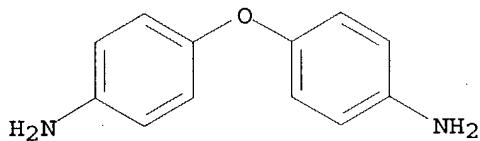
CM 4

CRN 2420-87-3
CMF C16 H6 O6



CM 5

CRN 101-80-4
CMF C12 H12 N2 O

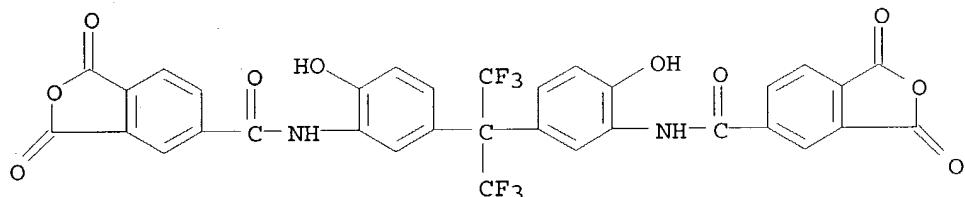


IT 223255-30-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of heat-resistant pos. photosensitive resin precursor composition)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-037

ICS G03F007-022; G03F007-004; H05K003-06; H05B033-14

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 73, 76

ST pos working photosensitive polyimide precursor compn display fabrication; heat resistant coating material photoresist
compn display fabrication

IT Electroluminescent devices

(displays; heat-resistant pos. photosensitive resin precursor composition suitable for fabricating display)

IT Luminescent screens

(electroluminescent; heat-resistant pos. photosensitive resin precursor composition suitable for fabricating display)

IT Crosslinking agents

Electrochromic imaging devices

Field emission displays

Liquid crystal displays

Photolithography

Positive photoresists

Semiconductor device fabrication

(heat-resistant pos. photosensitive resin precursor composition suitable for fabricating display)

IT Polyamic acids

Polybenzoxazoles

Polyimides, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(heat-resistant pos. photosensitive resin precursor
composition suitable for fabricating display)

IT Coating materials
(heat-resistant; heat-resistant pos. photosensitive resin
precursor composition suitable for fabricating display)

IT 35512-24-4, BIR-PTBP
RL: RCT (Reactant); RACT (Reactant or reagent)
(BIR-PTBP; preparation of heat-resistant pos. photosensitive resin
precursor composition)

IT 843-55-0, Bis-Z
RL: TEM (Technical or engineered material use); USES (Uses)
(Bis-Z, crosslinking agent; in heat-resistant pos.
photosensitive resin precursor composition suitable for
fabricating insulator layer of display)

IT 151319-83-4, BisRS 2P
RL: RCT (Reactant); RACT (Reactant or reagent)
(BisRS 2P; preparation of heat-resistant pos. photosensitive resin
precursor composition)

IT 22247-58-1, DML-MBPC
RL: TEM (Technical or engineered material use); USES (Uses)
(DML-MBPC, crosslinking agent; in heat-resistant pos.
photosensitive resin precursor composition suitable for
fabricating insulator layer of display)

IT 2768-02-7, Vinyltrimethoxysilane 3957-22-0, TM-BIP-A 4356-60-9
5568-04-7, DML-POP 17464-88-9 22247-59-2, DML-MTrisPC 42934-02-1,
TML-HQ 93933-64-3, BIR-PC 109129-38-6 110726-28-8, TrisP-PA
162846-59-5, HML-TPHAP 190321-06-3, Dimethylol BisOC-P 421546-91-0
455943-61-0, TMOM-BP 457057-43-1, ML 26X 457057-45-3, 4PC
RL: TEM (Technical or engineered material use); USES (Uses)
(crosslinking agent; in heat-resistant pos. photosensitive
resin precursor composition suitable for fabricating insulator
layer of display)

IT 151402-72-1P 236095-20-8P 264604-36-6P 281653-60-9P
330687-43-9P 431041-54-2P 455943-58-5P 455943-60-9P
455943-62-1P 455943-63-2P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(in heat-resistant pos. photosensitive resin precursor
composition suitable for fabricating insulator layer of display)

IT 930-37-0, Glycidyl methyl ether 4637-24-5
RL: TEM (Technical or engineered material use); USES (Uses)
(in heat-resistant pos. photosensitive resin precursor
composition suitable for fabricating insulator layer of display)

IT 64-17-5, Ethyl alcohol, reactions 80-05-7, Bisphenol A, reactions
99-57-0, 2-Amino-4-nitrophenol 99-63-8, Isophthalic acid chloride
122-04-3, 4-Nitrobenzoylchloride 1107-00-2, 2,2-Bis(3,4-
dicarboxyphenyl)hexafluoropropanedianhydride 1204-28-0, Trimellitic
anhydride chloride 2421-28-5, 3,3',4,4'-Benzophenonetetracarboxylic acid
dianhydride 3770-97-6, 1,2-Naphthoquinonediazide-5-sulfonyl chloride
7719-09-7, Thionyl chloride 27955-94-8, TrisP HAP 36451-09-9,
1,2-Naphthoquinonediazide-4-sulfonyl chloride 83558-87-6,
2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of heat-resistant pos. photosensitive resin precursor
composition)

IT 25596-69-4P 27431-43-2P 38595-90-3P 50853-29-7P, Diethyl
 pyromellitate 51063-33-3P, Diethyl 3,3',4,4'-
 benzophenonetetracarboxylate 129197-38-2P 129388-96-1P 151598-18-4P
 157445-87-9P 223255-30-9P 455943-56-3P 455943-57-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation of heat-resistant pos. photosensitive resin precursor
 composition)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

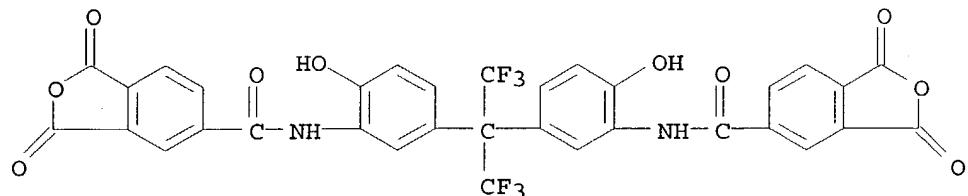
L154 ANSWER 23 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2002:313331 CAPLUS
 DOCUMENT NUMBER: 136:348301
 TITLE: Alkali-developable positive-working photosensitive
 resin precursor compositions
 INVENTOR(S): Suwa, Atsushi; Fujita, Yoji; Tomikawa, Masao
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002122991	A2	20020426	JP 2000-319070	20001019
PRIORITY APPLN. INFO.:			JP 2000-319070	20001019

AB The compns., useful for surface protective film **semiconductor**
 devices, interlayer insulating films, etc., contain (a) polymers which
 mainly comprise $[COR_1(OH)_p(CO_2R_3)_mCONHR_2(OH)_qNH]_n$ ($R_1 = C \geq 2$
 $2-8$ -valent organic group; $R_2 = C \geq 2$ 2-6-valent organic group; $R_3 = H$,
 C_{1-20} organic group; $n = 1-10,000$; $m = 0-2$; $p, q = 0-4$; $p + q > 0$) and show
 mol. weight distribution (M_w/M_n) 2.2-10, (b) phenols, and (c) esterified
 quinonediazide compds. The compns. show high resolution, sensitivity, and
 residual film rate.

IT 223255-30-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (alkali-developable pos.-working photoresist compns
 . containing polyimide precursors, phenols, and quinonediazide esters)

RN 223255-30-9 CAPLUS
 CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-
 (trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-
 1,3-dioxo- (9CI) (CA INDEX NAME)



IT 417702-08-0P 417702-09-1P 417702-11-5P

417702-12-6P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(alkali-developable pos.-working photoresist compns
containing polyimide precursors, phenols, and quinonediazide esters)

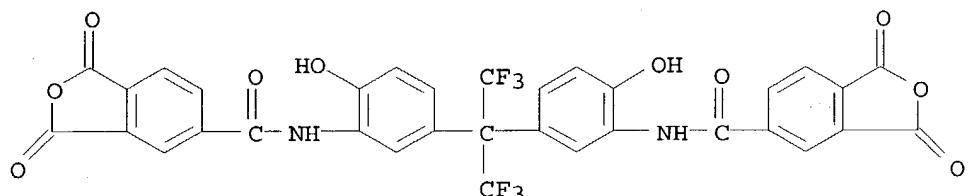
RN 417702-08-0 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[{2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4-ethynylbenzenamine, 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

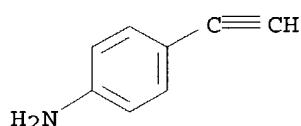
CMF C33 H16 F6 N2 O10



CM 2

CRN 14235-81-5

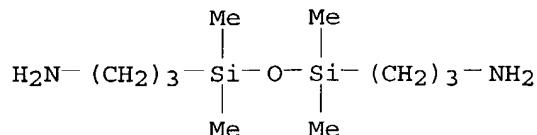
CMF C8 H7 N



CM 3

CRN 2469-55-8

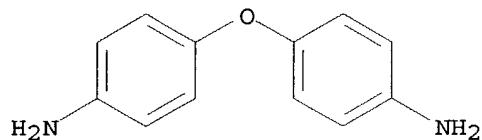
CMF C10 H28 N2 O Si2



CM 4

CRN 101-80-4

CMF C12 H12 N2 O



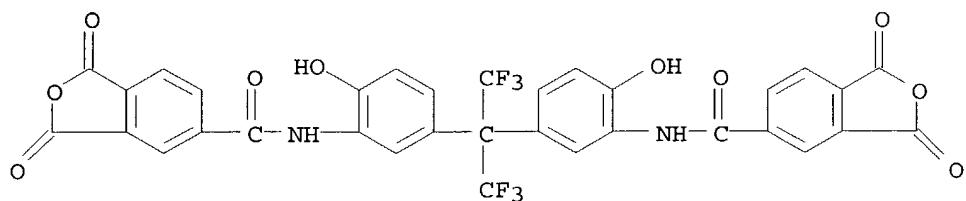
RN 417702-09-1 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with Sumidur N 3300 and N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[4-aminobenzamide] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

CMF C33 H16 F6 N2 O10



CM 2

CRN 141911-55-9

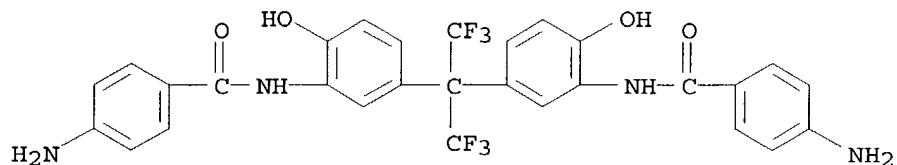
CMF Unspecified

CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 129197-38-2
CMF C29 H22 F6 N4 O4

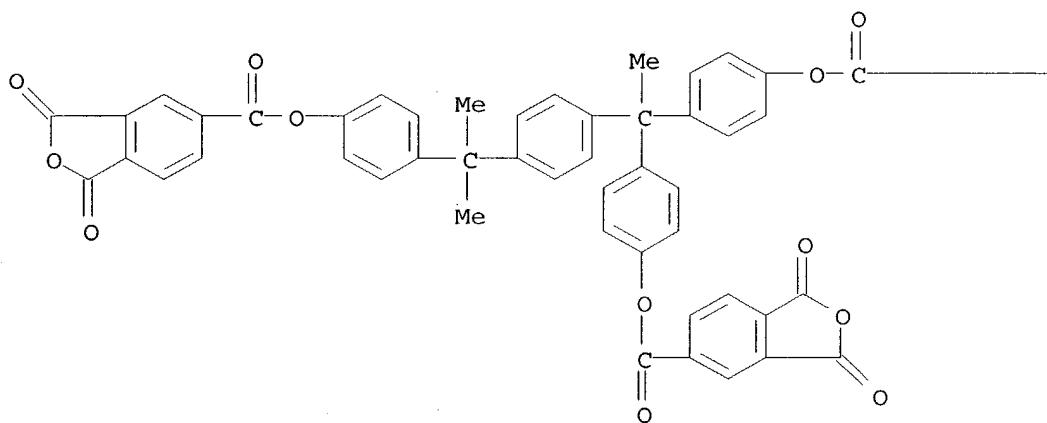


RN 417702-11-5 CAPLUS
CN 5-Isobenzofurancarboxylic acid, 1,3-dihydro-1,3-dioxo-, ethylidynetri-4,1-phenylene ester, polymer with 3-amino-N-(5-amino-2-hydroxyphenyl)benzamide, [1-[4-[1-[4-[(1,3-dihydro-1,3-dioxo-5-isobenzofuranyl)carbonyloxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,3-dihydro-1,3-dioxo-5-isobenzofurancarboxylate), 4,4'-oxybis[benzenamine], 5,5'-oxybis[1,3-isobenzofurandione], 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] and N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo-5-isobenzofurancarboxamide] (9CI) (CA INDEX NAME)

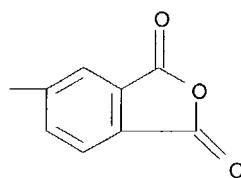
CM 1

CRN 417702-06-8
CMF C56 H34 O15

PAGE 1-A

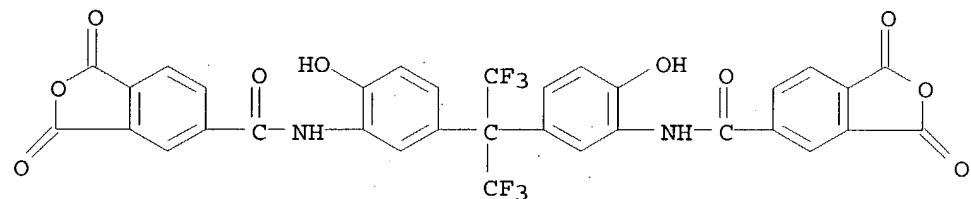


PAGE 1-B



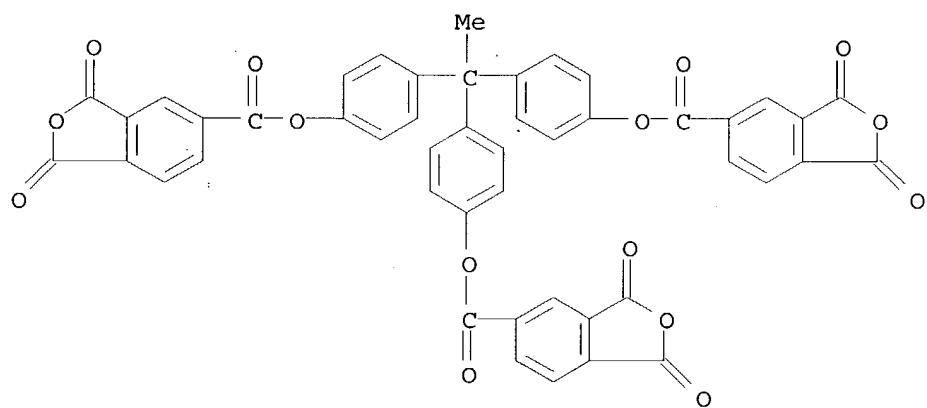
CM 2

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



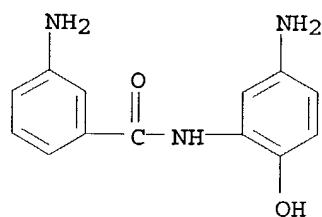
CM 3

CRN 144773-50-2
CMF C47 H24 O15



CM 4

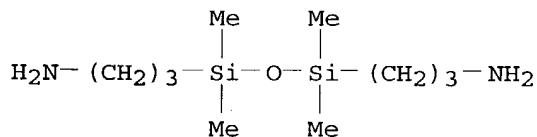
CRN 27431-43-2
CMF C13 H13 N3 O2



CM 5

CRN 2469-55-8

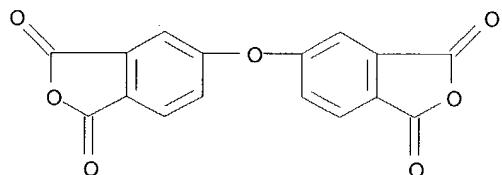
CMF C10 H28 N2 O Si2



CM 6

CRN 1823-59-2

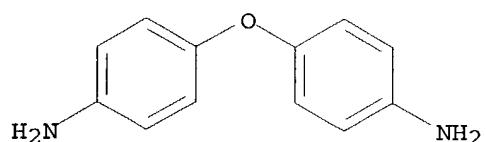
CMF C16 H6 O7



CM 7

CRN 101-80-4

CMF C12 H12 N2 O



RN 417702-12-6 CAPLUS

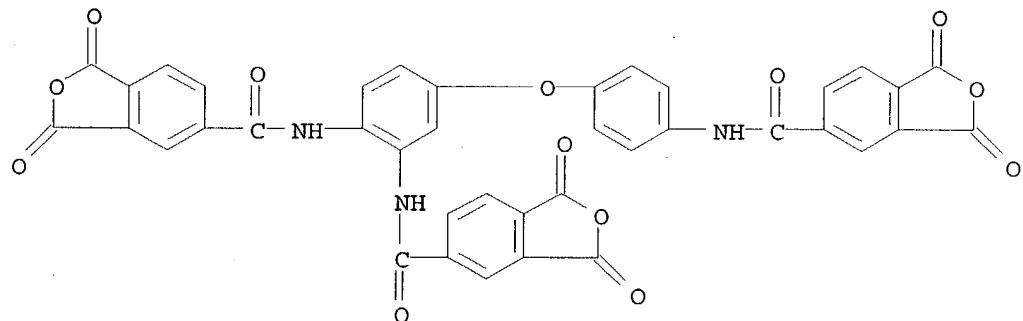
CN 5-Isobenzofurancarboxamide, N,N'-[4-[4-[(1,3-dihydro-1,3-dioxo-5-isobenzofuranyl)carbonyl]amino]phenoxy]-1,2-phenylene]bis[1,3-dihydro-1,3-

dioxo-, polymer with 3-amino-N-(5-amino-2-hydroxyphenyl)benzamide, 4,4'-oxybis[benzenamine], 5,5'-oxybis[1,3-isobenzofurandione], 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] and N,N'-[{2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-5-isobenzofurancarboxamide] (9CI) (CA INDEX NAME)

CM 1

CRN 417702-07-9

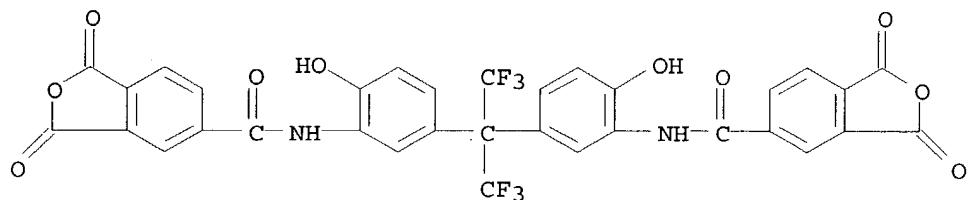
CMF C39 H19 N3 O13



CM 2

CRN 223255-30-9

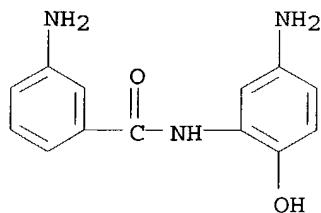
CMF C33 H16 F6 N2 O10



CM 3

CRN 27431-43-2

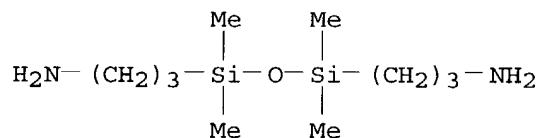
CMF C13 H13 N3 O2



CM 4

CRN 2469-55-8

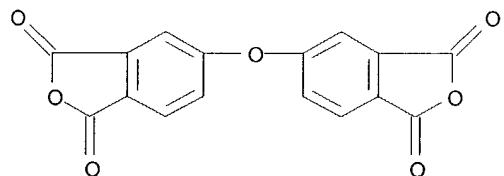
CMF C10 H28 N2 O Si2



CM 5

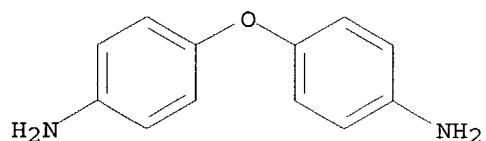
CRN 1823-59-2

CMF C16 H6 O7



CRN 101-80-4

CMF C12 H12 N2 O



IC ICM G03F007-037

ICS C08G073-10; C08K005-13; C08K005-28; C08L079-08; G03F007-004;

G03F007-022; H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST alkali developable pos photoresist polyamic acid phenol

IT Positive photoresists
(UV; alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

IT Phenols, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

IT Polyamic acids
RL: TEM (Technical or engineered material use); USES (Uses)
(alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

IT 53155-39-8P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

IT 843-55-0 93933-64-3
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

IT 99-57-0, 2-Amino-4-nitrophenol 99-63-8, Isophthaloyl chloride
122-04-3, 4-Nitrobenzoyl chloride 1204-28-0, Trimellitic anhydride
chloride 6264-66-0, 3,4,4'-Triaminodiphenyl ether 27955-94-8,
TrisP-HAP 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
110726-28-8, TrisP-PA
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

IT 25596-69-4P 27431-43-2P 129197-38-2P 144773-50-2P
223255-30-9P 417702-06-8P 417702-07-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

IT 417702-08-0P 417702-09-1P 417702-10-4P
417702-11-5P 417702-12-6P 417702-13-7P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(alkali-developable pos.-working **photoresist compns**
containing polyimide precursors, phenols, and quinonediazide esters)

L154 ANSWER 24 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:63548 CAPLUS

DOCUMENT NUMBER: 136:142606

TITLE: Fluorenediamine-derived polyamide, positively-working
photosensitive polyamide composition, and
semiconductor device using the composition

INVENTOR(S): Hirano, Takashi; Banba, Toshio

PATENT ASSIGNEE(S) : Sumitomo Bakelite Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

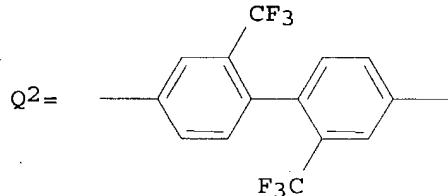
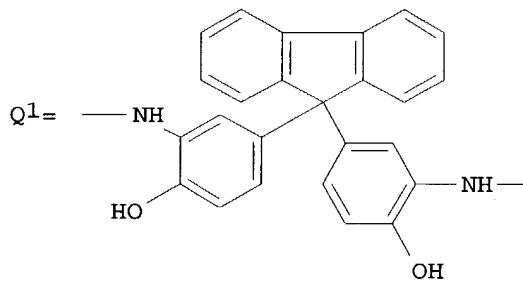
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002020485	A2	20020123	JP 2000-206005	20000707
PRIORITY APPLN. INFO.:			JP 2000-206005	20000707
GI				



AB The polyamide is that represented as $[(XC(O)YC(O)]a[NHZNHC(O)HC(O)]b]n$ [I; X = divalent aromatic group Q1; Y = o-, m-, or p-C₆H₄; p-C₆H₄-p-C₆H₄, o-C₆H₄-o-C₆H₄, m-C₆H₄-m-C₆H₄, p-C₆H₄-p-AC₆H₄, Q2, A = CH₂, CMe₂, O, S, SO₂, CO, NHCO, C(CF₃)₂; Z = R₁SiR₃R₄OSiR₃R₄(R₂); R₁, R₂ = divalent organic group; R₃, R₄ = monovalent organic group; a + b = 100; a = 60-100; b = 0-40; n = 2-200]. The photosensitive composition, showing heat resistance and providing cured films with low dielec. constant, consists of 100 parts I and 1-100 parts photosensitive diazoquinone compound. The semiconductor device is that prepared by applying of the composition on a semiconductor chip so that cured film with 0.1-30 μ m thickness is obtained, prebaking, exposing, developing, and heating of the applied composition layer followed by sealing of the resulting chip.

IT 391671-50-4P

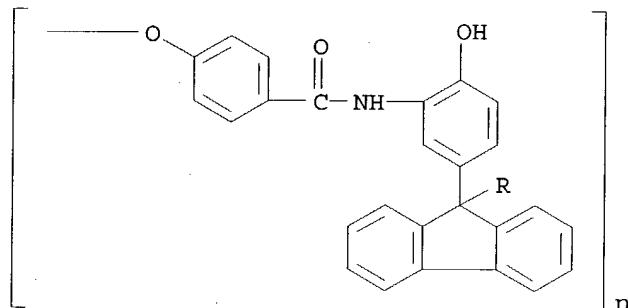
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(pos.-working photosensitive composition containing fluorenediamine-derived polyamide for semiconductor device fabrication)

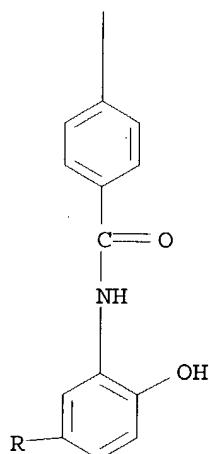
RN 391671-50-4 CAPLUS

CN Poly[oxy-1,4-phenylenecarbonylimino(6-hydroxy-1,3-phenylene)-9H-fluoren-9-ylidene(4-hydroxy-1,3-phenylene)iminocarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C08G069-42
IC S C08K005-13; C08K005-23; C08L077-06; G03F007-022; G03F007-037;
G03F007-075; H01L021-027; H01L023-29; H01L023-31
CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reproductive Processes)
Section cross-reference(s): 38, 76
ST polyamide pos working photosensitive compn diazoquinone; fluorenediamine
polyamide photosensitive **semiconductor** device packaging
IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(cardo; pos.-working photosensitive composition containing fluorenediamine-
derived polyamide for **semiconductor** device fabrication)
IT Cardo polymers
RL: TEM (Technical or engineered material use); USES (Uses)
(polyamides; pos.-working photosensitive composition containing

fluorenediamine-derived polyamide for **semiconductor** device fabrication)

IT Electric insulators
Electronic packaging process
Photolithography
(pos.-working photosensitive composition containing fluorenediamine-derived polyamide for **semiconductor** device fabrication)

IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(pos.-working photosensitive composition containing fluorenediamine-derived polyamide for **semiconductor** device fabrication)

IT 603-44-1 2467-02-9
RL: MOA (Modifier or additive use); USES (Uses)
(in pos.-working photosensitive composition containing fluorenediamine-derived polyamide for **semiconductor** device fabrication)

IT 391671-48-0P 391671-49-1P 391671-50-4P 391671-51-5P
391936-35-9P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working photosensitive composition containing fluorenediamine-derived polyamide for **semiconductor** device fabrication)

IT 137902-98-8 138636-85-8
RL: TEM (Technical or engineered material use); USES (Uses)
(pos.-working photosensitive composition containing fluorenediamine-derived polyamide for **semiconductor** device fabrication)

L154 ANSWER 25 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:36602 CAPLUS

DOCUMENT NUMBER: 136:103469

TITLE: Heat-resistant resin compositions
useful for **semiconductor** devices with good
adhesion and low absorbance

INVENTOR(S): Okuda, Ryoji; Fujiwara, Takenori; Tomikawa, Masao

PATENT ASSIGNEE(S): Toray Industries, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002012761	A2	20020115	JP 2001-112287	20010411
PRIORITY APPLN. INFO.:			JP 2000-129395	A 20000428

AB The compns. useful for surface protective and insulative uses for **semiconductor** devices contain triazine and/or vinyl group-containing compds. and [COR1(OH)_p(CO₂R₃)_nCONHR₂(OH)_q(CO₂R₄)_mNH]_m [R₁, R₂ = (2-8 valent) organic group containing ≥ 2 C atoms; R₃, R₄ = H, alkali metal ion, ammonium ion, C₁₋₂₀ organic group; m = 3-100,000; n = 0-2; p, q = 0-4; n + q > 0]. Thus, cyanuric acid triallyl ester was mixed with a mixture containing 4,4'-diaminodiphenyl ether-pyromellitic anhydride-3,3',4,4'-benzophenonetetracarboxylic dianhydride copolymer, N,N-dimethylaminoethylmethacrylamide, N-phenylglycin, ethylene glycol

dimethacrylate, and 3,3'-carbonylbis(7-diethylaminocoumarin), the resulting mixture was applied on a glass substrate, dried, and cured to give a 1 μm film showing absorbance 0.035 at 500 nm.

IT 236095-20-8P 261373-47-1DP, ester with
N,N-dimethylformamide di-Me acetal

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(heat-resistant resin compns. useful for
semiconductor devices with good adhesion and low absorbance)

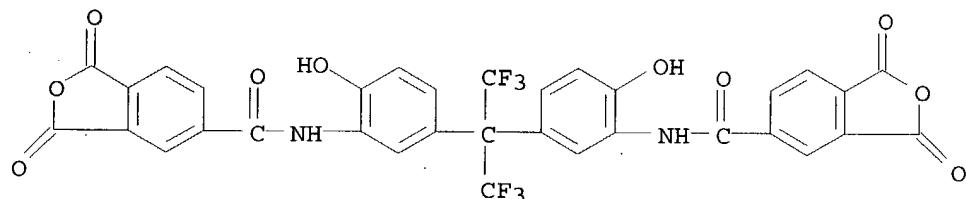
RN 236095-20-8 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

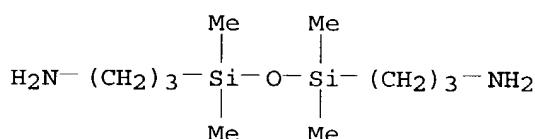
CMF C33 H16 F6 N2 O10



CM 2

CRN 2469-55-8

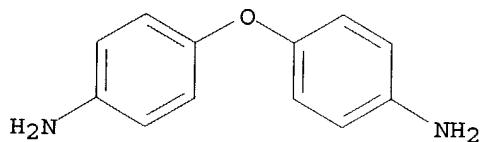
CMF C10 H28 N2 O Si2



CM 3

CRN 101-80-4

CMF C12 H12 N2 O



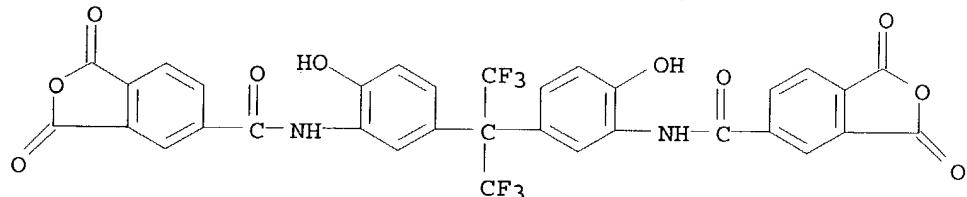
RN 261373-47-1 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

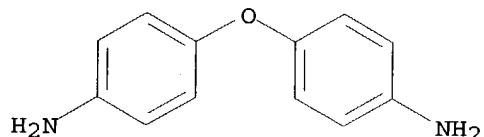
CMF C33 H16 F6 N2 O10



CM 2

CRN 101-80-4

CMF C12 H12 N2 O



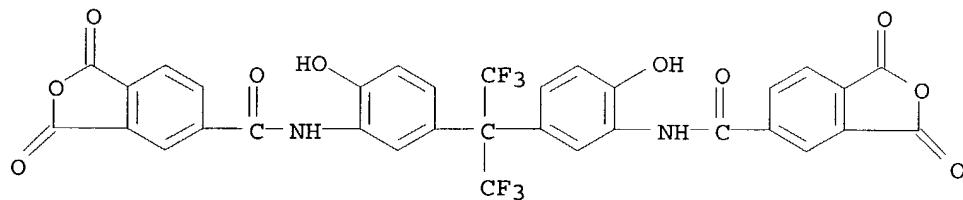
IT 223255-30-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(heat-resistant resin compns. useful for
semiconductor devices with good adhesion and low absorbance)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM C08L079-08
ICS C08F002-44; C08F283-04; C08G073-06; C08G073-10; C08K005-00;
C08K005-17; C08K005-28; C08K005-3492; C08L079-04; H01L021-312;
H01L021-768

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s) : 76

ST heat **resistant compn semiconductor film**
triazine; interlayer insulator absorbance ethylene glycol methacrylate;
surface protective layer pyromellitic anhydride quinonediazide; photoacid
generator cyanuric acid ester film

IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(fluorine-containing; heat-**resistant resin compns.**
useful for **semiconductor** devices with good adhesion and low
absorbance)

IT Heat-**resistant** materials
Semiconductor devices
(heat-**resistant** resin **compns.** useful for
semiconductor devices with good adhesion and low absorbance)

IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(heat-**resistant** resin **compns.** useful for
semiconductor devices with good adhesion and low absorbance)

IT Polyimides, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(polybenzoxazole-; heat-**resistant** resin
compns. useful for **semiconductor** devices with good
adhesion and low absorbance)

IT Fluoropolymers, uses
Polybenzoxazoles
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP
(Properties); TEM (Technical or engineered material use); PREP
(Preparation); USES (Uses)
(polyimide-; heat-**resistant** resin **compns.** useful
for **semiconductor** devices with good adhesion and low
absorbance)

IT 84329-58-8P, 3,3',4,4'-Benzophenonetetracarboxylic dianhydride-1,3-bis(3-
aminopropyl)tetramethylsiloxane-4,4'-diaminodiphenyl ether-pyromellitic
anhydride copolymer 90863-90-4P, BEM-S-pyromellitic anhydride copolymer

129219-16-5P 232589-14-9DP, ester with N,N-dimethylformamide di-Me acetal 236095-20-8P 261373-47-1DP, ester with N,N-dimethylformamide di-Me acetal 389085-23-8P, N,N-Dimethylaminoethylmethacrylamide-ethylene glycol dimethacrylate copolymer 389085-32-9P, 3,5-Diaminobenzoic acid-4,4'-diaminodiphenylether-3,3',4,4'-diphenylether tetracarboxylic dianhydride dibutyl ester dichloride copolymer 389086-41-3P, 4,4'-Diaminodiphenyl ether-pyromellitic anhydride copolymer ester with 2-hydroxyethyl methacrylate, polymer with trimethylolpropane triacrylate, ethylene glycol dimethacrylate, and 3-methacryloxypropylmethoxysilane

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(heat-resistant resin compns. useful for semiconductor devices with good adhesion and low absorbance)

IT 220426-92-6P 223255-30-9P 251650-61-0P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(heat-resistant resin compns. useful for semiconductor devices with good adhesion and low absorbance)

IT 78-08-0, Vinyltriethoxysilane 100-42-5, Styrene, uses 101-37-1, Triallyl cyanurate 290-87-9, 1,3,5-Triazine 1025-15-6, Triallyl isocyanurate 1087-21-4, Diallyl isophthalate 2768-02-7, Vinyltrimethoxysilane

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(heat-resistant resin compns. useful for semiconductor devices with good adhesion and low absorbance)

IT 119666-27-2 172491-61-1, 4NT-300

RL: MOA (Modifier or additive use); USES (Uses)

(photoacid generator; heat-resistant resin compns.

useful for semiconductor devices with good adhesion and low absorbance)

IT 4024-72-0, o-Quinonediazide

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(photoacid generator; heat-resistant resin compns.

useful for semiconductor devices with good adhesion and low absorbance)

L154 ANSWER 26 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:927390 CAPLUS

DOCUMENT NUMBER: 136:54878

TITLE: Polyamide compositions and their dielectric films with excellent heat resistance and water absorption

INVENTOR(S): Yoshida, Tatsuhiko; Okanuma, Masako; Murata, Mitsuru

PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO. DATE

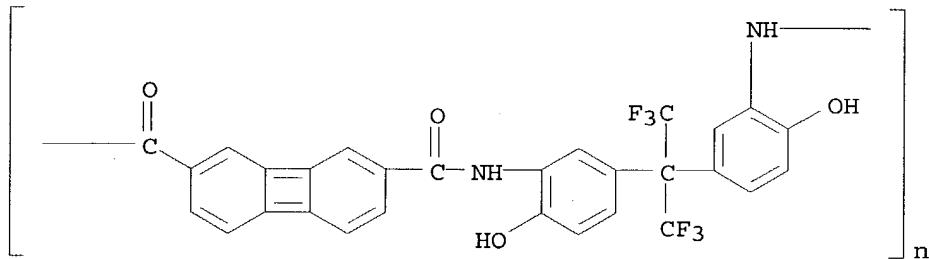
JP 2001354852 A2 20011225 JP 2000-180505 20000615
 PRIORITY APPLN. INFO.: JP 2000-180505 20000615

AB The compns., useful for interlayer dielects., solder resists, etc., contain polyamides having units $[C:ONHX(OH)2NHC:OY]_1[C:ONHX(OH)2NHC:OZ]_m$ (X = tetravalent aromatic group; Y = divalent biphenylene; Z = divalent aromatic group; $1 > 0$; $m > 0$; $1 + m = 2-1000$; $1/(1 + m) = 0.05-1$) and oligomers. Thus, a composition containing 100 parts 2,6-biphenylenedicarbonyl chloride-2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic chloride copolymer and 5 parts poly(Me methacrylate) with Mn 5000 was applied on a glass plate and heated to give a film which have pores with size ≤ 5 nm and show sp. dielec. constant 2.5, 5% weight loss temperature 543° , glass-transition temperature 405° , and H₂O absorption 0.2%.

IT 382608-45-9P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (crosslinked; polyamide compns. containing oligomers for dielec. porous polybenzoxazole films with good heat resistance and water absorption)

RN 382608-45-9 CAPLUS

CN Poly[imino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl-2,7-biphenylenediylcarbonyl] (9CI) (CA INDEX NAME)



IC ICM C08L079-04
 ICS C08G073-22; C08J009-04; C08L101-00; H01B003-30; H01L021-312; H01L021-768

CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 76

ST dielec film biphenylene polyamide acrylic oligomer; water absorption polyamide porous film semiconductor; heat resistance polyamide crosslinking polybenzoxazole film

IT Polyamides, uses
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (crosslinked; polyamide compns. containing oligomers for dielec. porous polybenzoxazole films with good heat resistance and water absorption)

IT Heat-resistant materials

Porous materials

(films; polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT Films

(heat-resistant; polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT Dielectric films

Plastic films

(polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT **Polybenzoxazoles**

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT Polyoxyalkylenes, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT Polymer blends

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT Films

(porous; polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT 382608-43-7P, 2,6-Biphenyleneddicarbonyl dichloride-2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic chloride copolymer

382608-44-8P, 2,7-Biphenyleneddicarbonyl dichloride-2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane copolymer 382608-45-9P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(crosslinked; polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

IT 9003-11-6, Ethylene oxide-propylene oxide copolymer 9003-53-6, Polystyrene 9011-14-7, Poly(methyl methacrylate) 25322-69-4

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(polyamide compns. containing oligomers for dielec. porous **polybenzoxazole** films with good heat resistance and water absorption)

ACCESSION NUMBER: 2001:806194 CAPLUS
DOCUMENT NUMBER: 136:70209
TITLE: Synthesis and properties of novel cardo aromatic poly(ether-benzoxazole)s
AUTHOR(S): Hsiao, Sheng-Huei; He, Ming-Hsiang
CORPORATE SOURCE: Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan
SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (2001), 39(22), 4014-4021
CODEN: JPACEC; ISSN: 0887-624X
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

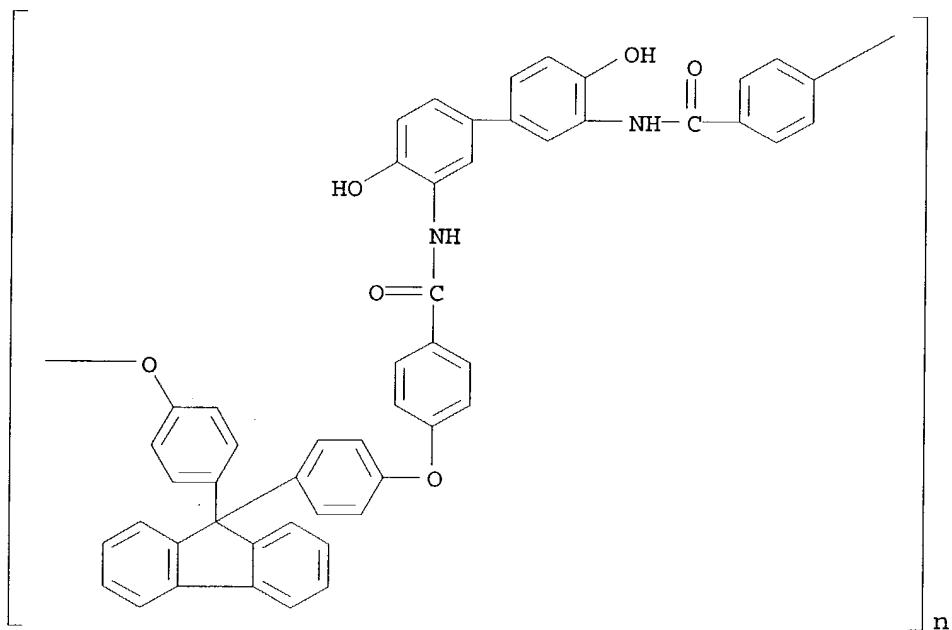
AB **Polybenzoxazoles** bearing ether and cardo groups were prepared by the low-temperature solution polycondensation of bis(ether-acyl chloride)s with three bis(aminophenol)s and subsequent thermal cyclodehydration of the resultant poly(o-hydroxy amide)s. 1,1-Bis[4-(4-chloroformylphenoxy)phenyl]cyclohexane, 5,5-bis[4-(4-chloroformylphenoxy)phenyl]-4,7-methanohexahydroindan, and 9,9-bis[4-(4-chloroformylphenoxy)phenyl]fluorene were used as monomers. The intermediate poly(o-hydroxy amide)s exhibited inherent viscosities in the range of 0.35-0.71 dL/g. All of the poly(o-hydroxy amide)s were amorphous and soluble in many organic polar solvents, and most of them could afford flexible and tough films by solvent casting. The poly(o-hydroxy amide)s exhibited glass-transition temps. (Tg's) in the range of 141-169°, and could be thermally converted into the corresponding **Polybenzoxazoles** approx. in the region of 240-350°, as indicated by the DSC thermograms. Flexible and tough films of **Polybenzoxazoles** could be obtained by thermal cyclodehydration of the poly(o-hydroxy amide) films. All the **Polybenzoxazoles** were amorphous and showed higher Tg and dramatically decreased solubility as compared with their poly(o-hydroxy amide) precursors. They exhibited Tg's of 215-272° by DSC, and did not show significant weight loss until 500° in nitrogen or air.

IT 383435-06-1P 383435-12-9P 383435-18-5P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and characterization of cardo polyether-polyamides and polyether-**Polybenzoxazoles**)
RN 383435-06-1 CAPLUS
CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylene carbonylimino(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)iminocarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *
RN 383435-12-9 CAPLUS
CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylene carbonylimino(4,4'-dihydroxy[1,1'-biphenyl]-3,3'-

diyl)iminocarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 383435-18-5 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy-1,4-phenylene carbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36

ST polyamide **polybenzoxazole** polyether cardo prepn property

IT Elongation, mechanical

Glass transition temperature

Tensile strength

Young's modulus

(of cardo polyether-polyamides and polyether-polybenzoxazoles)

IT Polyethers: preparation

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(polyamide-, cardo; preparation and characterization of cardo polyether-polymers and polyether-polybenzoxazoles)

IT Polyethers, preparation

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)
(polyamide-, fluorine-containing, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Fluoropolymers, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyether-, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Cardo polymers
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyethers, fluorine-containing; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Cardo polymers
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyamide-polyethers; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Polyethers, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polybenzobisoxazole-, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Polyethers, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polybenzobisoxazole-, fluorine-containing, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Fluoropolymers, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polybenzobisoxazole-polyether-, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Cardo polymers
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polybenzobisoxazole-polyethers, fluorine-containing; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT Cardo polymers
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polybenzobisoxazole-polyethers; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT **Polybenzoxazoles**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polybenzobisoxazoles, polyether-, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)

IT **Polybenzoxazoles**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polybenzobisoxazoles, polyether-, fluorine-containing, cardo; preparation and

characterization of cardo polyether-polyamides and polyether-
polybenzoxazoles)
IT Polyamides, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyether-, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)
IT Polyamides, preparation
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(polyether-, fluorine-containing, cardo; preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)
IT 383434-99-9P 383435-00-5P 383435-02-7P 383435-03-8P 383435-05-0P
383435-06-1P 383435-07-2P 383435-08-3P 383435-09-4P
383435-10-7P 383435-11-8P **383435-12-9P** 383435-13-0P
383435-14-1P 383435-15-2P 383435-16-3P 383435-17-4P
383435-18-5P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)
IT 126296-90-0P 126296-92-2P 383435-19-6P 383435-20-9P 383435-21-0P
383435-22-1P 383435-23-2P 383435-24-3P 383435-25-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and characterization of cardo polyether-polyamides and polyether-**polybenzoxazoles**)
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L154 ANSWER 28 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:692107 CAPLUS
DOCUMENT NUMBER: 135:264551
TITLE: Positive-working photosensitive polyamide compositions having high sensitivity and **semiconductor** devices fabricated by using the same
INVENTOR(S): Kenmochi, Tomonori; Hirano, Takashi
PATENT ASSIGNEE(S): Sumitomo Bakelite Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001255654	A2	20010921	JP 2000-68097	20000313

PRIORITY APPLN. INFO.: JP 2000-68097 20000313

AB The compns. contain 100 parts polyamides EC(O) [[NHX(OH)2NHC(O)YC(O)]a [NHN
HC(O)YC(O)b]]nNHX(OH)2NHC(O)E (X = tetravalent aromatic group; Y = divalent aromatic group; Z = R1SiR3R4OSeR3R4R2; R1, R2 = divalent organic group; R3, R4 = monovalent organic group; E = aliphatic, alicyclic, or cyclic compds. containing alkenyl and/or alkynyl; a = 60.0-100.0 mol%, b = 0-40.0 mol%, a + b = 100

mol%, n =2-500), 1-100 parts photosensitive diazoquinones, and 0.01-20 parts phenolic resins. The compns., especially photoresists, give ultrafine patterns having good shapes by i-ray exposure for semiconductor devices. The compns. can also be used for interlayer dielec., cover coats for flexible Cu clad laminates, solder resists, liquid crystal alignment layers, etc.

IT 361347-08-2P 361347-09-3P

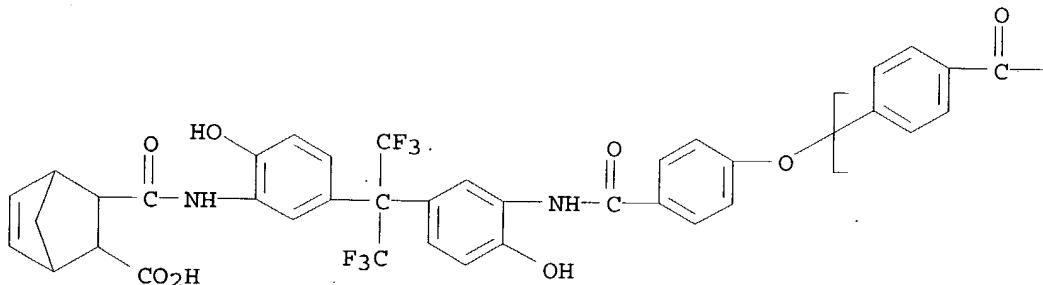
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamide-based pos. photoresist compns. containing diazoquinones and phenolic resins for semiconductor device manufacture)

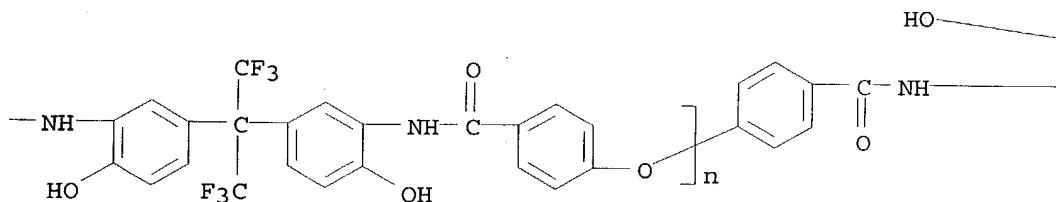
RN 361347-08-2 CAPLUS

CN Poly[oxy-1,4-phenylene carbonylimino(6-hydroxy-1,3-phenylene) [2,2,2-trifluoro-1-(trifluoromethyl)ethylidene] (4-hydroxy-1,3-phenylene) iminocarbonyl-1,4-phenylene], α -[4-[[5-[1-[3-[(3-carboxybicyclo[2.2.1]hept-5-en-2-yl)carbonyl]amino]-4-hydroxyphenyl]-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2-hydroxyphenyl]amino]carbonyl]phenyl]- ω -[4-[[5-[1-[3-[(3-carboxybicyclo[2.2.1]hept-5-en-2-yl)carbonyl]amino]-4-hydroxyphenyl]-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2-hydroxyphenyl]amino]carbonyl]phenoxy] - (9CI) (CA INDEX NAME)

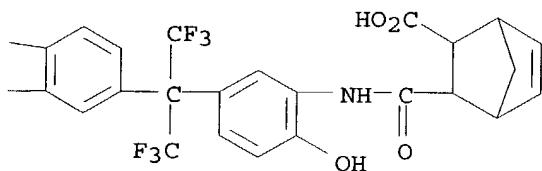
PAGE 1-A



PAGE 1-B



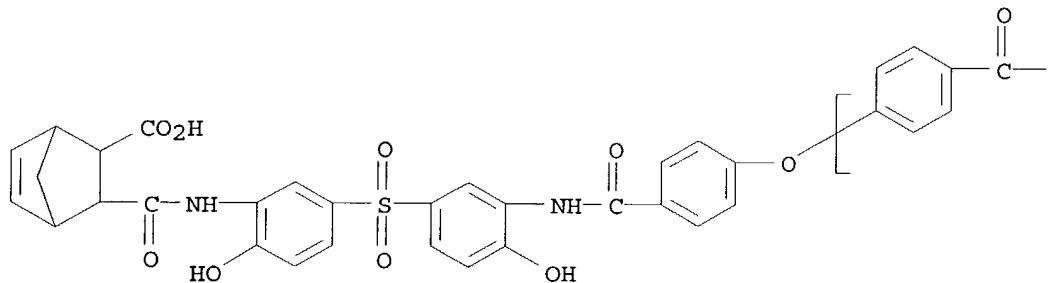
PAGE 1-C



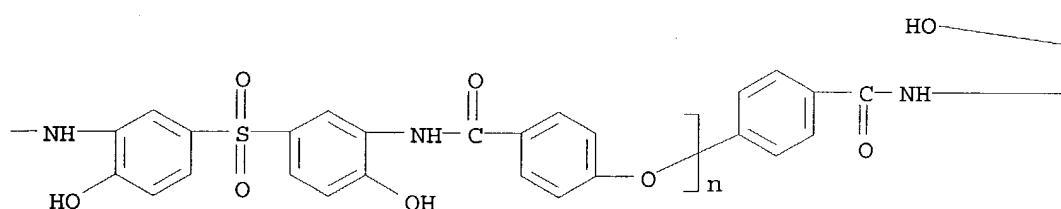
RN 361347-09-3 CAPLUS

CN Poly[oxy-1,4-phenylene carbonylimino(6-hydroxy-1,3-phenylene) sulfonyl(4-hydroxy-1,3-phenylene) iminocarbonyl-1,4-phenylene], α -[4-[[5-[[3-[(3-carboxybicyclo[2.2.1]hept-5-en-2-yl) carbonyl] amino]-4-hydroxyphenyl] sulfonyl]-2-hydroxyphenyl] amino] carbonyl] phenyl]- ω -[4-[[5-[[3-[(3-carboxybicyclo[2.2.1]hept-5-en-2-yl) carbonyl] amino]-4-hydroxyphenyl] sulfonyl]-2-hydroxyphenyl] amino] carbonyl] phenoxy] - (9CI)
(CA INDEX NAME)

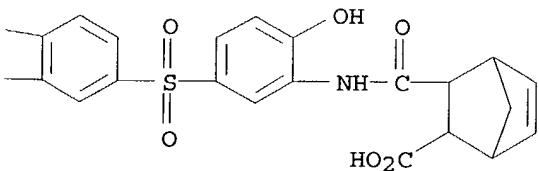
PAGE 1-A



PAGE 1-B



PAGE 1-C



IC ICM G03F007-037
 ICS C08F002-48; C08F299-02; C08G069-26; C08K005-23; C08L077-06;
 G03F007-004; G03F007-022; H01L021-027; H01L021-312; H01L023-29;
 H01L023-31; C08L061-06

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 76

ST pos photoresist polyamide diazoquinone **semiconductor** device manuf; phenolic resin polyamide pos photoresist; polyimide precursor pos photoresist **semiconductor** manuf

IT Positive **photoresists**
Semiconductor device fabrication
 (polyamide-based pos. **photoresist compns.** containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

IT Phenolic resins, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (polyamide-based pos. **photoresist compns.** containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

IT Polyamic acids
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyamide-based pos. **photoresist compns.** containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

IT Polyamides, preparation
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyamide-based pos. **photoresist compns.** containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

IT Polyimides, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (polyamide-based pos. **photoresist compns.** containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

IT 137902-98-8
 RL: CAT (Catalyst use); USES (Uses)
 (polyamide-based pos. **photoresist compns.** containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

IT 9003-35-4 9008-61-1 9016-83-5 9039-25-2 361347-11-7
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material

use); USES (Uses)

(polyamide-based pos. photoresist compns. containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

IT 826-62-0DP, 5-Norbornene-2,3-dicarboxylic anhydride, reaction products with polyamides 26041-86-1DP, 3,3'-Diamino-4,4'-dihydroxydiphenyl sulfone-diphenyl ether-4,4'-dicarboxylic acid copolymer, reaction products with 5-norbornene-2,3-dicarboxylic anhydride 112492-60-1DP, Diphenyl ether-4,4'-dicarboxylic acid-hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane copolymer, reaction products with 5-norbornene-2,3-dicarboxylic anhydride 123349-56-4DP, Isophthalic acid-hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane-terephthalic acid copolymer, reaction products with 5-norbornene-2,3-dicarboxylic anhydride 361347-08-2P 361347-09-3P 361347-10-6DP, reaction products with 5-norbornene-2,3-dicarboxylic anhydride 361380-98-5P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

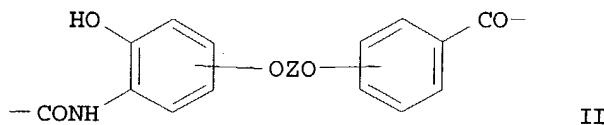
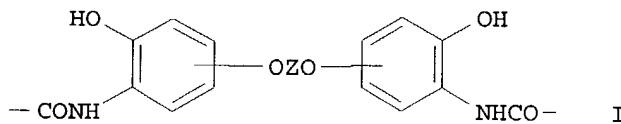
(polyamide-based pos. photoresist compns. containing diazoquinones and phenolic resins for **semiconductor** device manufacture)

L154 ANSWER 29 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:676835 CAPLUS
 DOCUMENT NUMBER: 135:242700
 TITLE: *Applications*
 Polybenzoxazole precursors,
 polybenzoxazoles, and photoresist
 solutions containing the precursors
 INVENTOR(S): Haussmann, Joerg; Maier, Gerhard; Schmid, Guenter;
 Sezi, Recai
 PATENT ASSIGNEE(S): Infineon Technologies A.-G., Germany
 SOURCE: PCT Int. Appl., 37 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001066619	A1	20010913	WO 2001-DE907	20010309
W: JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
DE 10011604	A1	20011004	DE 2000-10011604	20000310
EP 1189974	A1	20020327	EP 2001-931357	20010309
EP 1189974	B1	20030521		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2003525985	T2	20030902	JP 2001-565782	20010309
US 2002086968	A1	20020704	US 2001-8796	20011113
PRIORITY APPLN. INFO.:			DE 2000-10011604 A	20000310
			WO 2001-DE907	W 20010309

GI



AB The invention relates to **polybenzoxazole** precursors which are provided with one of the partial structures I or II (in which the rings may contain F, Me, CF₃, OMe, or OCF₃ substituents and Z is an aromatic or heterocyclic connecting group). The precursors may be used in conjunction with diazo ketones in **photoresist solns.** for photoconversion to the cyclized **polybenzoxazoles**. An example was given for the production of 9,9-bis[4-(4-amino-3-hydroxyphenoxy)phenyl]fluorene-terephthaloyl chloride copolymer and its cyclization in the presence of the diester of bisphenol A with naphthoquinone diazide-5-sulfonic acid to give a high-temperature-stable resist.

IT 488838-66-0P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(**polybenzoxazole** precursor production and use for photoresists)

RN 488838-66-0 CAPLUS

CN Poly[oxy-1,4-phenylene-9H-fluoren-9-ylidene-1,4-phenyleneoxy(3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenylene carbonylimino(2-hydroxy-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

IC ICM C08G073-22

ICS G03F007-038

CC 35-5 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 24, 37, 74

ST **polybenzoxazole** precursor prodn photoresist

IT Polyamides, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cardo; **polybenzoxazole** precursor production and use for photoresists)

IT Polyamides, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(fluorine-containing, cardo; **polybenzoxazole** precursor production and

use for photoresists)
IT Fluoropolymers, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamide-, cardo; **polybenzoxazole** precursor production and use for photoresists)
IT Cardo polymers
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamides, fluorine-containing; **polybenzoxazole** precursor production and use for photoresists)
IT Cardo polymers
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamides; **polybenzoxazole** precursor production and use for photoresists)
IT Photoresists
(**polybenzoxazole** precursor production and use for photoresists)
IT **Polybenzoxazoles**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole** precursor production and use for photoresists)
IT 359820-18-1P 359820-19-2P 359820-20-5P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer intermediate; **polybenzoxazole** precursor production and use for photoresists)
IT 3236-71-3, 9,9-Bis(4-hydroxyphenyl)fluorene 129464-01-3 359820-21-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(monomer starting material; **polybenzoxazole** precursor production and use for photoresists)
IT 359642-31-2P 359820-23-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; **polybenzoxazole** precursor production and use for photoresists)
IT 38595-90-3
RL: MOA (Modifier or additive use); USES (Uses)
(photoactive agent; **polybenzoxazole** precursor production and use for photoresists)
IT **488838-66-0P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(**polybenzoxazole** precursor production and use for photoresists)
IT 32109-45-8P, Poly(2,6-benzoxazolediyl) 359862-18-3P 359862-20-7P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**polybenzoxazole** precursor production and use for photoresists)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L154 ANSWER 30 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

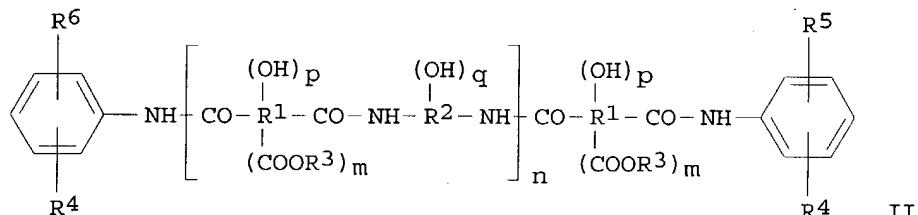
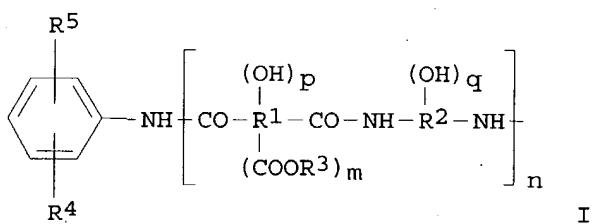
ACCESSION NUMBER: 2001:632157 CAPLUS

DOCUMENT NUMBER: 135:203005

TITLE: Positive-working photosensitive resin precursor

INVENTOR(S): composition
 Suwa, Atsushi; Fujita, Yoji; Tomikawa, Masao
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001235860	A2	20010831	JP 2000-182706	20000619
JP 3460679	B2	20031027		
PRIORITY APPLN. INFO.:			JP 1999-358651	A 19991217
GI				



AB The composition comprises (a) a polymer having structural units I and/or II (R1 = 2- to 8-valent C \geq 2 group; R2 = 2- to 6-valent C \geq 2 group; R3 = H, OH, C1-20 organic group; R4 = H, OH, C1-10 hydrocarbyl; R5 = C1-10 hydrocarbon with \geq 1 unsatd. group; nitro, methylol, ester, hydroxyalkyl; n = 10-100,000; m = 0-2; p, q = 0-4; p + q >0), (b) a compound having phenolic OH groups, and (c) an esterified quinonediazide compound. The UV exposed part of the polyimide precursor is developable with aqueous alkali solution and the composition is useful for protective film and insulating layer of **semiconductor** elements.

IT 236095-20-8DP, reaction products with 4-allylaniline
 264604-36-6DP, reaction products with 4-ethynylaniline
 357275-38-8P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (pos.-working photosensitive resin composition containing polyimide precursor,

phenolic compound, and esterified quinonediazide)

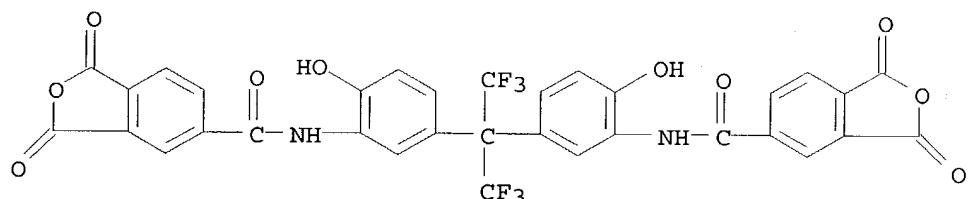
RN 236095-20-8 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

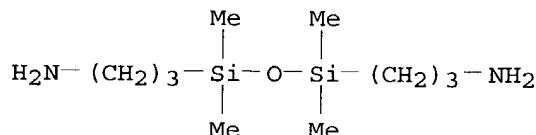
CMF C33 H16 F6 N2 O10



CM 2

CRN 2469-55-8

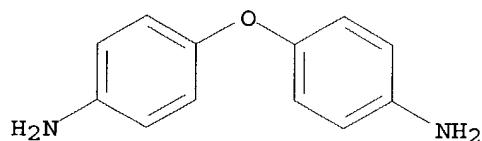
CMF C10 H28 N2 O Si2



CM 3

CRN 101-80-4

CMF C12 H12 N2 O



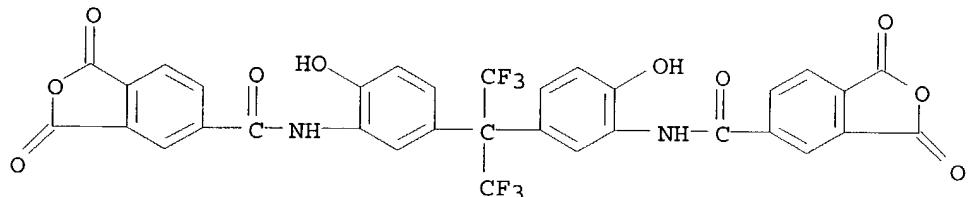
RN 264604-36-6 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[4-

aminobenzamide] (9CI) (CA INDEX NAME)

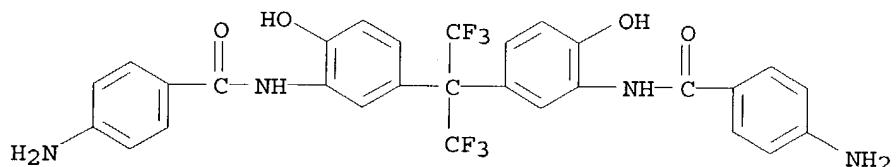
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



CM 2

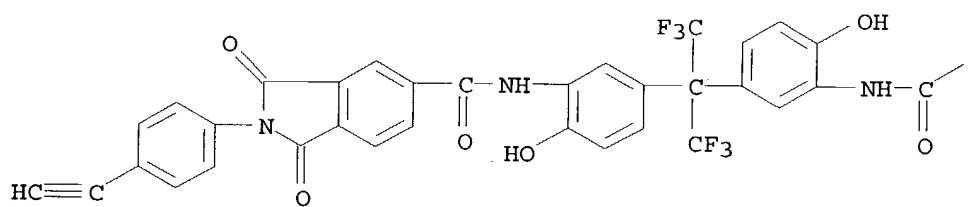
CRN 129197-38-2
CMF C29 H22 F6 N4 O4



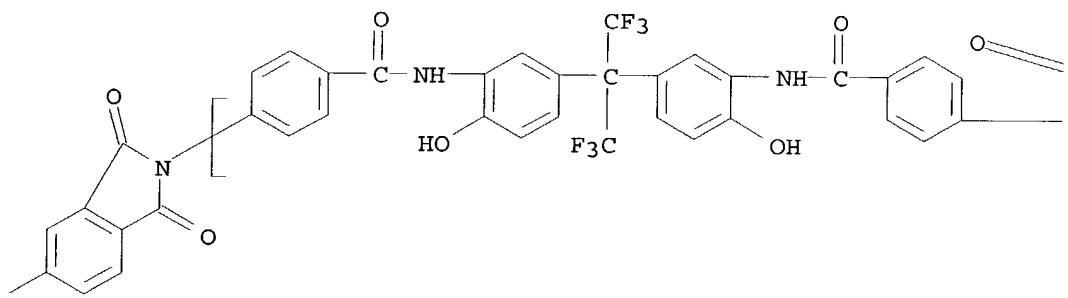
RN 357275-38-8 CAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)carbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)-1,4-phenylene carbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl-1,4-phenylene], α -(4-ethynylphenyl)- ω -[5-[[5-[1-[3-[[2-(4-ethynylphenyl)-2,3-dihydro-1,3-dioxo-1H-isoindol-5-yl]carbonyl]amino]-4-hydroxyphenyl]-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-2-hydroxyphenyl]amino]carbonyl]-1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl]-(9CI) (CA INDEX NAME)

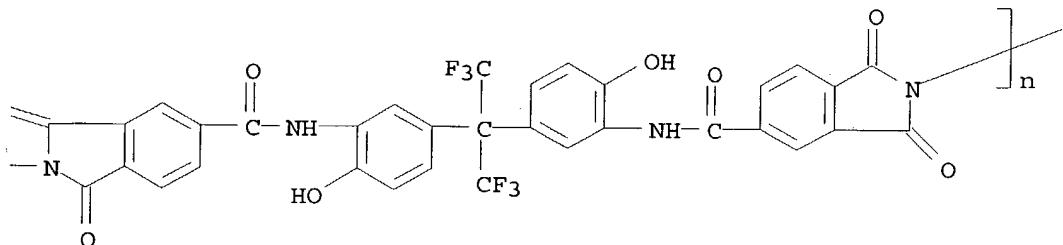
PAGE 1-A



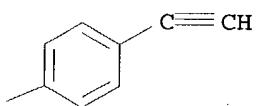
PAGE 1-B



PAGE 1-C



PAGE 1-D

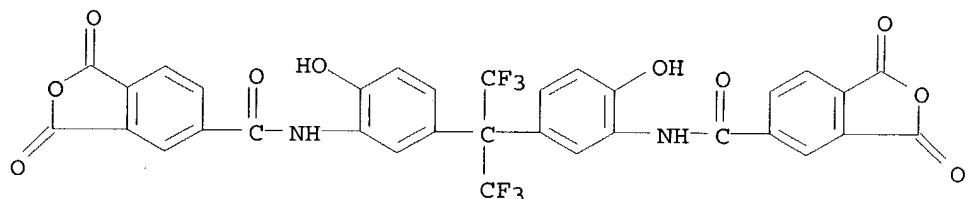


IT 223255-30-9P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization of)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-037

ICS C08G073-14; C08K005-13; C08K005-28; C08L079-08; G03F007-004; G03F007-022; H01L021-027; H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST polyimide terminated pos photoresist; phenolic compd photoresist; quinonediazide ester photoresist

IT Positive photoresists

(pos.-working photosensitive resin composition containing polyimide precursor, phenolic compound, and esterified quinonediazide)

IT Polyimides, preparation

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)
(pos.-working photosensitive resin composition containing polyimide precursor,
phenolic compound, and esterified quinonediazide)

IT 93933-64-3
RL: TEM (Technical or engineered material use); USES (Uses)
(BIR PC; pos.-working photosensitive resin composition containing polyimide precursor, phenolic compound, and esterified quinonediazide)

IT 151319-83-4
RL: TEM (Technical or engineered material use); USES (Uses)
(Bis RS 2P; pos.-working photosensitive resin composition containing polyimide precursor, phenolic compound, and esterified quinonediazide)

IT 99-09-2DP, 3-Nitroaniline, reaction products with polyimide 930-37-0DP,
Glycidyl methyl ether, reaction products with polyimide 1520-21-4DP,
4-Vinylaniline, reaction products with polyimide 14235-81-5DP,
4-Ethynylaniline, reaction products with polyimide 32704-23-7DP,
4-Allylaniline, reaction products with polyimide 37829-64-4P
38595-90-3P 58886-62-7P 69088-96-6DP, 4-(3-Aminophenyl)-2-methyl-3-
butyn-2-ol, reaction products with polyimide 151598-18-4P
236095-20-8DP, reaction products with 4-allylaniline
261373-50-6DP, reaction products with 4-vinylaniline 264604-36-6DP
, reaction products with 4-ethynylaniline 281653-60-9DP, reaction
products with 4-allylaniline and glycidyl Me ether 357275-38-8P
357275-39-9DP, reaction products with 3-nitroaniline and glycidyl Me ether
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos.-working photosensitive resin composition containing polyimide precursor,
phenolic compound, and esterified quinonediazide)

IT 843-55-0, Bis-Z 110726-28-8, Tris P PA
RL: TEM (Technical or engineered material use); USES (Uses)
(pos.-working photosensitive resin composition containing polyimide precursor,
phenolic compound, and esterified quinonediazide)

IT 25596-69-4P 27431-43-2P 220426-92-6P 223255-30-9P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
RACT (Reactant or reagent)
(preparation and polymerization of)

IT 80-05-7, Bisphenol A, reactions 99-89-8, 4-Isopropylphenol 135-19-3,
2-Naphthol, reactions 3770-97-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of esterified quinonediazide compound)

IT 99-63-8, Isophthalic acid chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with amine compound)

IT 122-04-3, 4-Nitrobenzoyl chloride 552-30-7, Trimellitic anhydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with diamine compound)

IT 99-57-0, 2-Amino-4-nitrophenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with isophthalic acid chloride)

IT 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with trimellitic anhydride)

L154 ANSWER 31 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2001:129745 CAPLUS
 DOCUMENT NUMBER: 134:179659
 TITLE: Heat-resistant resin compositions
 with improved adhesion with substrates
 INVENTOR(S): Okuda, Yoshiharu; Tomikawa, Masao; Fujita, Yoji
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

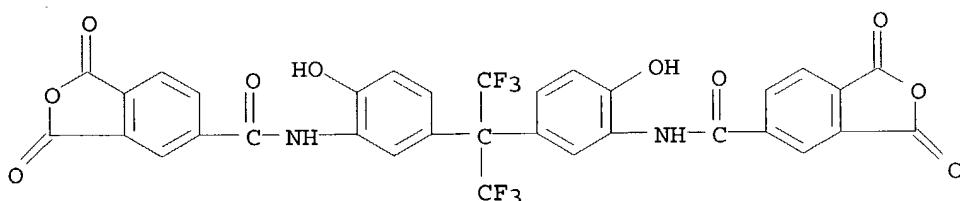
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001049119	A2	20010220	JP 1999-227814	19990811
PRIORITY APPLN. INFO.:			JP 1999-227814	19990811

AB The compns. useful for interlayer insulating films and surface protective films for **semiconductor** devices contain heat-resistant resins or their precursors, solvents, and 1-10% (based on the resins) silicone diamines. Thus, stirring 4,4'-diaminodiphenyl ether 19.0, 1,3-bis(3-aminopropyl)tetramethyldisiloxane (I) 1.2, pyromellitic anhydride 10.9, and 3,3',4,4'-benzophenonetetracarboxylic acid dianhydride 15.0 g in NMP gave a polyamic acid, which was mixed with N,N-dimethylaminoethyl methacrylamide 26, ethylene glycol dimethacrylate 5, N-phenylglycine 2.5, 3,3'-carbonylbis(7-diethylaminocoumarin) 0.2, and I 0.9 g to give a photosensitive varnish. The varnish was applied on a silicone wafer and cured to give a film showing no peeling after heating.

IT 236095-20-8P
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (heat-resistant resin compns. with good adhesion for **semiconductor** devices)

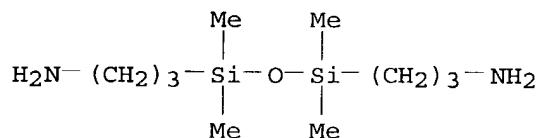
RN 236095-20-8 CAPLUS
 CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10

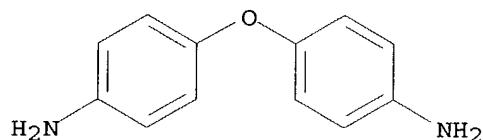
CM 2

CRN 2469-55-8
CMF C10 H28 N2 O Si2



CM 3

CRN 101-80-4
CMF C12 H12 N2 O



IC ICM C08L079-08
ICS C08K005-544; G03F007-022; G03F007-037; H01L021-312
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
ST polyimide precursor polyamic acid heat resistance; adhesion improver
siloxane diamine polyimide; elec insulator heat resistance polyimide;
photosensitive heat resistance resin; **semiconductor** heat
resistance interlayer insulating film
IT Heat-**resistant** materials
(films; heat-**resistant** resin compns. with good
adhesion for **semiconductor** devices)
IT Adhesion promoters
Electric insulators
Heat-**resistant** materials
Semiconductor devices
(heat-**resistant** resin compns. with good adhesion
for **semiconductor** devices)
IT **Polybenzoxazoles**
Polyimides, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or
engineered material use); PREP (Preparation); USES (Uses)
(heat-**resistant** resin compns. with good adhesion
for **semiconductor** devices)
IT Polyamic acids
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)

(heat-resistant resin compns. with good adhesion for semiconductor devices)

IT Films
(heat-resistant; heat-resistant resin compns. with good adhesion for semiconductor devices)

IT Polyamides, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(polyhydroxy-; heat-resistant resin compns. with good adhesion for semiconductor devices)

IT 98-59-9DP, p-Toluenesulfonyl chloride, reaction products with 1,3-bis(3-aminopropyl)tetramethyldisiloxane 110-16-7DP, Maleic acid, reaction products with 1,3-bis(3-aminopropyl)tetramethyldisiloxane 2469-55-8DP, 1,3-Bis(3-aminopropyl)tetramethyldisiloxane, reaction products with toluenesulfonyl chloride
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(heat-resistant resin compns. with good adhesion for semiconductor devices)

IT 211873-94-8P 236095-20-8P 326595-30-6P 326595-31-7P
326595-32-8P 326595-33-9P 326595-34-0P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(heat-resistant resin compns. with good adhesion for semiconductor devices)

IT 2469-55-8, 1,3-Bis(3-aminopropyl)tetramethyldisiloxane
RL: MOA (Modifier or additive use); USES (Uses)
(heat-resistant resin compns. with good adhesion for semiconductor devices)

IT 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(heat-resistant resin compns. with good adhesion for semiconductor devices)

L154 ANSWER 32 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:835217 CAPLUS
DOCUMENT NUMBER: 134:23499
TITLE: Heating of patterned heat-resistant resin composition film
INVENTOR(S): Okuda, Ryoji; Tomikawa, Masao; Fujita, Yoji
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000327775	A2	20001128	JP 1999-137155	19990518
PRIORITY APPLN. INFO.:			JP 1999-137155	19990518
AB The pattern of the composition containing a polymer based on structural repeating unit [COR1(OH)p(CO2R3)nCONHR2(OH)qNH]m (R1 = C \geq 2 3-8-valent organic				

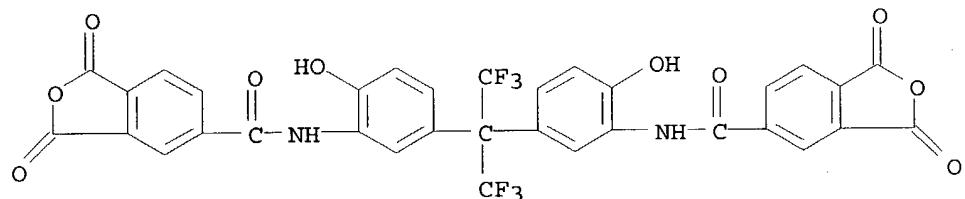
group; R₂ = C₂≥2 2-6-valent organic group; R₃ = H, alkali metal ion, ammonium ion, C₁-20 organic group; m = 3-100,000; n = 0-2; p, q = 0-4; n + q >0) is heated at (T ± 10)° (T = m.p. of solvents contained in the polymer under 1 atm) for ≥10 min. The composition contains the polymer and a photosensitive acid-generating agent. The edge of the pattern shows retention of rectangular shape, due to the heating, in posttreatment. The process is suitable in formation of intermediate elec. insulator film in **semiconductor** devices, etc.

IT 223255-30-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(heating of heat-**resistant** polymer **composition** film from)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



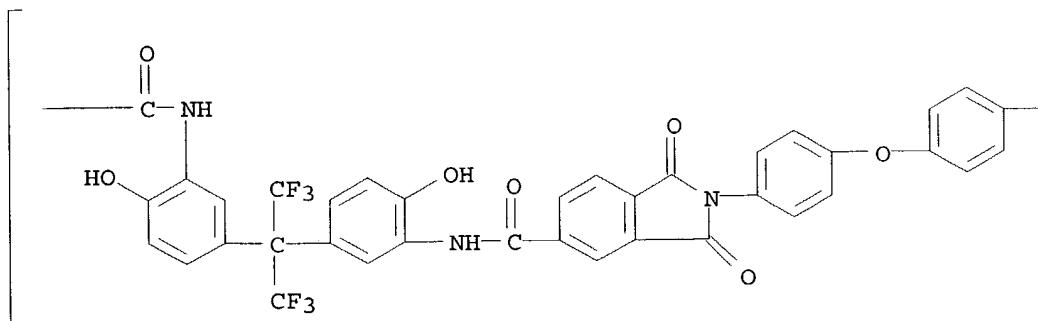
IT 231963-06-7P 261373-47-1P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(heating of heat-**resistant** polymer **composition** film photolithog. pattern for keeping shape of edge)

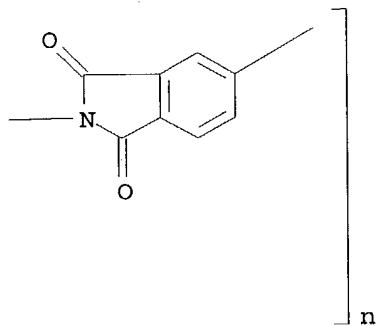
RN 231963-06-7 CAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)-1,4-phenyleneoxy-1,4-phenylene(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)carbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



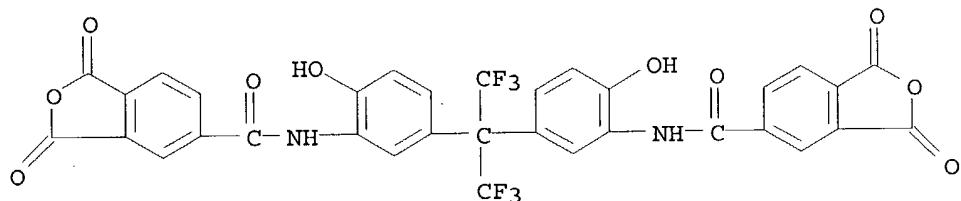
RN 261373-47-1 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

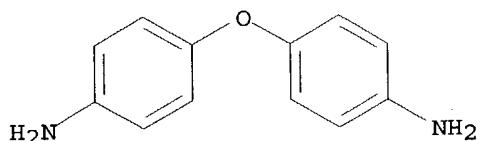
CMF C33 H16 F6 N2 O10



CM 2

CRN 101-80-4

CMF C12 H12 N2 O



IC ICM C08G069-26

ICS C08G073-10; C08J007-00; C08L077-06; C08L079-08; G03F007-11;
H01L021-027

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

ST heating heat resistant photolithog film pattern; edge shape rectangular retention photolithog pattern; **semiconductor** device elec insulator film photolithog

IT Heat-resistant materials

 Heating

 Photolithography

 (heating of heat-resistant polymer **composition** film photolithog. pattern for keeping shape of edge)

IT Polyamic acids

Polybenzoxazoles

 RL: TEM (Technical or engineered material use); USES (Uses)

 (heating of heat-resistant polymer **composition** film photolithog. pattern for keeping shape of edge)

IT **Semiconductor** device fabrication

 (heating of heat-resistant polymer **composition** film photolithog. pattern for keeping shape of edge for)

IT 220426-92-6P 223255-30-9P

 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

 (heating of heat-resistant polymer **composition** film from)

IT 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane

 RL: RCT (Reactant); RACT (Reactant or reagent)

 (heating of heat-resistant polymer **composition** film from)

IT 84329-58-8P, 3,3',4,4'-Benzophenonetetracarboxylic dianhydride-1,3-bis(3-aminopropyl)tetramethyldisiloxane-4,4'-diaminodiphenyl ether-pyromellitic dianhydride copolymer 106709-71-1P 112492-59-8P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthaloyl dichloride copolymer 113339-21-2P 231963-06-7P 232589-14-9P 251904-83-3P
261373-47-1P 261503-45-1P

 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

 (heating of heat-resistant polymer **composition** film photolithog. pattern for keeping shape of edge)

IT 96-48-0, γ -Butyrolactone 127-19-5, Dimethylacetamide 872-50-4, N-Methyl-2-pyrrolidone, processes

 RL: NUU (Other use, unclassified); REM (Removal or disposal); PROC (Process); USES (Uses)

 (heating of heat-resistant polymer **composition** film photolithog. pattern for keeping shape of edge)

IT 97-90-5, Ethylene glycol dimethacrylate 103-01-5, N-Phenylglycine 120-07-0, N-Phenyldiethanolamine 13081-44-2, N,N-Dimethylaminoethylmethacrylamide 15625-89-5, Trimethylolpropane triacrylate

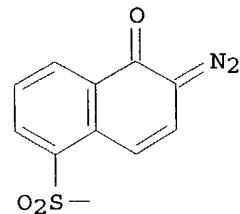
 RL: TEM (Technical or engineered material use); USES (Uses)

 (heating of heat-resistant polymer **composition** film photolithog. pattern for keeping shape of edge)

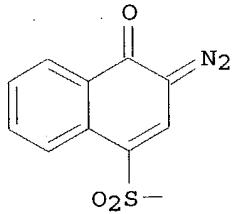
INVENTOR(S): Fujita, Yoji; Tomikawa, Masao; Okuda, Ryoji
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000298341	A2	20001024	JP 1999-106855	19990414
PRIORITY APPLN. INFO.:			JP 1999-106855	19990414

GI



I



I

AB The title composition contains (a) a polymer based on a structural unit [COR1(OH)_p(CO₂R₃)_mCONHR₂(OH)_qNH]_n (R₁ = C₂ organic group with 2 to 8 valences; R₂ = C₂ organic group with 2 to 6 valences; R₃ = H and/or C₁₋₂₀ organic group; n = 10-100,000; m = 0-2; p, q = 0-4, p ≠ q ≠ 0) and (b) ≥1 quinonediazide compound (R₄SO₂NH)_cR₅(OQ)_b(NHQ)_e(OSO₂R₆)_d [Q = I or II; R₄, R₆ = C₁₋₂₀ univalent organic group; R₅ = C₂ organic group with 2 to 8 valences; b + d, c + e = 0-4, b ≠ e ≠ 0, c ≠ d ≠, (b + d) ≠ (c + e) ≠ 0]. The composition is developable with aqueous alkali solns. and provides high quality patterns with high residual film rate.

IT 236095-20-8P

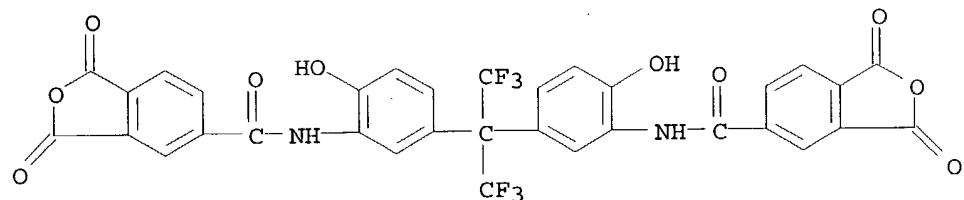
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (pos. photoresist composition containing polyimide or polybenzoxazole precursor and quinonediazide compound)

RN 236095-20-8 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[6-hydroxy-3,1-phenylene]]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

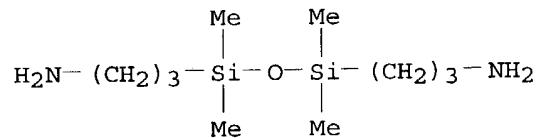
CRN 223255-30-9
 CMF C33 H16 F6 N2 O10



CM 2

CRN 2469-55-8

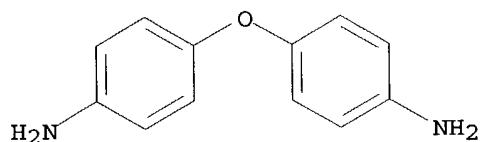
CMF C10 H28 N2 O Si2



CM 3

CRN 101-80-4

CMF C12 H12 N2 O

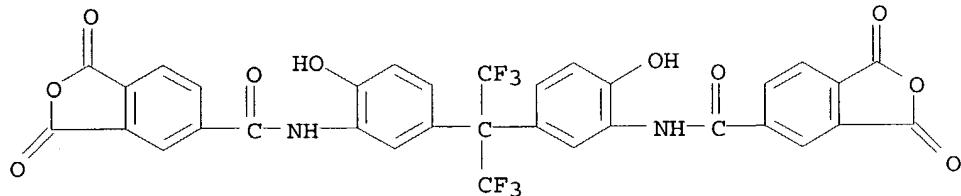


IT 223255-30-9P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);
RACT (Reactant or reagent)
(preparation and polymerization of)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-037
ICS C08G069-26; G03F007-022

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s) : 38

ST pos photoresist polyimide **polybenzoxazole** precursor;
quinonediazide compd pos photoresist

IT **Positive photoresists**
(pos. photoresist composition containing polyimide or
polybenzoxazole precursor and quinonediazide compound)

IT **Polybenzoxazoles**
Polyimides, preparation
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing polyimide or
polybenzoxazole precursor and quinonediazide compound)

IT 98-59-9, p-Toluenesulfonic acid chloride 36451-09-9,
1,2-Naphthoquinonediazide-4-sulfonyl chloride 38638-43-6,
1,2-Naphthoquinonediazide-5-sulfonic acid chloride 52499-14-6,
p-Dodecylbenzenesulfonyl chloride 110726-28-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of)

IT 83558-87-6DP, 2,2-Bis(3-amino-4-hydroxyphenyl) hexafluoropropane, reaction products with 1,2-naphthoquinonediazide-4(5)-sulfonic acid and p-toluenesulfonic acid 148879-74-7P 236095-20-8P
270903-11-2P 302792-34-3P 302792-35-4P 302792-37-6P 302792-38-7P
302798-02-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photoresist composition containing polyimide or
polybenzoxazole precursor and quinonediazide compound)

IT 25596-69-4P 46907-17-9P 129197-38-2P 223255-30-9P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and polymerization of)

IT 1204-28-0, Trimellitic acid anhydride chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of acid anhydride)

IT 99-57-0, 2-Amino-4-nitrophenol 99-63-8, 1,3-Benzenedicarbonyl dichloride 122-04-3, 4-Nitrobenzoyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of diamine compound)

DOCUMENT NUMBER: 133:96784
 TITLE: Photosensitive resin precursor composition
 INVENTOR(S): Tomikawa, Masao; Okuda, Ryoji; Fujita, Yoji
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000187317	A2	20000704	JP 1999-285482	19991006
PRIORITY APPLN. INFO.:			JP 1998-290480	A 19981013
OTHER SOURCE(S): MARPAT 133:96784				

GI

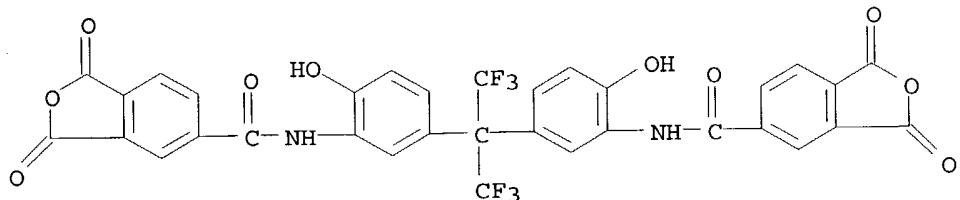
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title resin precursor composition contains (a) a polymer based on as structural unit of the formula $[\text{COR}_1(\text{OH})\text{p}(\text{CO}_2\text{R}_3)^{\text{m}}\text{CONHR}_2(\text{OH})^{\text{q}}\text{NH}]^{\text{n}}$ ($\text{R}_1 = \text{C}_2\text{ organic group with 3 to 8 valences}$; $\text{R}_2 = \text{C}_2\text{ organic group with 2 to 6 valences}$; $\text{R}_3 = \text{H, C}_1\text{-10 organic group}$; $\text{n} = 10\text{-}100,000$; $\text{m} = 1$ or 2 ; $\text{p, q} = 0\text{-}4$, $\text{p} \neq \text{q} \neq 0$) and (b) ≥ 1 quinonediazide compound selected from I-IV ($\text{Q} = \text{H, V, VI}$, all Q groups are not H at the same in the each compd; $\text{x} = 0\text{-}2$). The pos.-working photosensitive polyimide precursor composition shows improved alkali-developability and is especially suitable for **semiconductor** device fabrication.

IT 223255-30-9DP, polymers with aminophenyl ether and aminopropylmethylsiloxyane
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (photosensitive resin precursor composition containing polyimides and quinonediazide compds.)

RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[6-hydroxy-3,1-phenylene]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-022
 ICS C08K005-42; C08L077-06; C08L079-08; G03F007-037; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

ST photoresist polyimide quinonediazide **semiconductor** device fabrication

IT **Photoresists**
 Semiconductor device fabrication
 (photosensitive resin precursor **composition** containing polyimides and quinonediazide compds.)

IT **Polyimides, uses**
RL: TEM (Technical or engineered material use); USES (Uses)
 (photosensitive resin precursor composition containing polyimides and quinonediazide compds.)

IT 101-80-4DP, 4,4'-Diaminophenyl ether, polymers with aminopropylmethylsiloxane and hydroxy-containing acid anhydride 108-31-6DP, Maleic anhydride, polymers with hydroxy-containing acid anhydride and diamine compds. and aminopropylmethylsiloxane 930-37-0DP, Glycidylmethyl ether, polymers with hydroxy-containing acid anhydride and diamines and aminopropylmethylsiloxane 1188-33-6DP, N,N-Dimethylformamide diethylacetal, polymers with hydroxy-containing acid anhydride and diamine compds. and aminopropylmethylsiloxane 1823-59-2DP, polymers with hydroxy-containing diamine compds. and aminopropylmethylsiloxane 2420-87-3DP, 3,3',4,4'-Biphenyltetracarboxylic acid anhydride, polymers with hydroxy-containing acid anhydride and diamines and aminopropylmethylsiloxane 2469-55-8DP, 1,3-Bis(3-aminopropyl)tetramethyldisiloxane, polymers with aminophenyl ether and hydroxy-containing acid anhydride 25596-69-4DP, polymers with aminopropylmethylsiloxane and acid anhydride 27431-43-2DP, polymers with hydroxy-containing acid anhydride and aminopropylmethylsiloxane 129197-38-2DP, polymers with hydroxy-containing acid anhydride 223255-30-9DP, polymers with aminophenyl ether and aminopropylmethylsiloxane 280555-59-1P 280555-60-4P 280555-61-5P 280555-62-6P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (photosensitive resin precursor composition containing polyimides and quinonediazide compds.)

IT 75-56-9, reactions 99-57-0, 2-Amino-4-nitrophenol 99-63-8, 1,3-Benzenedicarbonyl dichloride 106-92-3, Allylglycidyl ether 121-90-4, 3-Nitrobenzoyl chloride 122-04-3, 4-Nitrobenzoyl chloride 3867-55-8, Trimellitic acid chloride 83558-87-6
RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of; in preparation of polyimides for photosensitive resin precursor composition)

IT 3770-97-6 7727-33-5 36451-09-9 51866-54-7 280555-63-7 280555-64-8
RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of; in preparation of quinonediazide compds. for photosensitive resin precursor composition)

L154 ANSWER 35 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:89548 CAPLUS

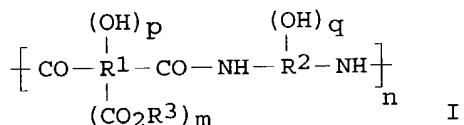
DOCUMENT NUMBER: 132:144416

TITLE: Alkaline-developable photosensitive heat-resistant polymer precursor

composition

INVENTOR(S): Tomikawa, Masao; Yoshida, Naoyo; Okuda, Ryoji
 PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000039714	A2	20000208	JP 1999-128166	19990510
JP 3514167	B2	20040331		
PRIORITY APPLN. INFO.:			JP 1998-131765	A 19980514
GI				



AB The title composition comprises (a) polymer comprising a structuring repeating unit of I (R1 = 2- to 8-valent organic group having ≥ 2 carbons; R2 = 2- to 6-valent organic group containing ≥ 2 carbons; R3 = H, organic group containing 1-20 carbons; n = 10-100,000; m = 0, 1, 2; p, q = 0-4; m + p + q ≥ 1), (b) quinonediazide compound, and (c) hardening agent. The hardening agent may be epoxy resin or metal (Ti, Al, or Zr) chelate compound

IT 257280-01-6P 257280-03-8P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (in alkaline-developable photosensitive heat-resistant polymer precursor composition)

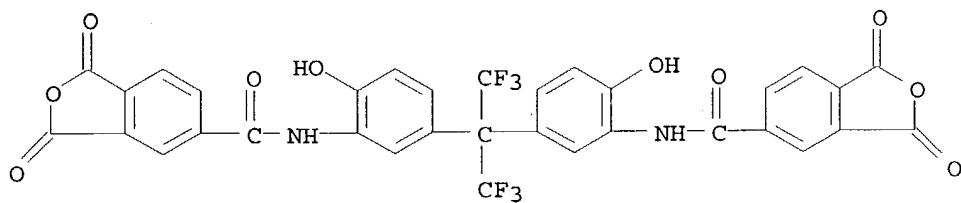
RN 257280-01-6 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] and N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[3-aminobenzamide] (9CI) (CA INDEX NAME)

CM 1

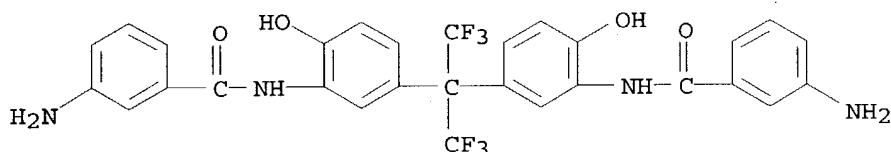
CRN 223255-30-9

CMF C33 H16 F6 N2 O10



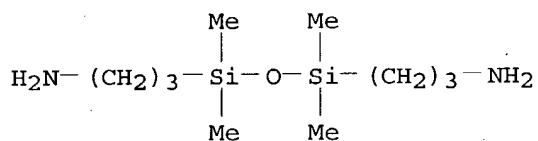
CM 2

CRN 220426-92-6
CMF C29 H22 F6 N4 O4



CM 3

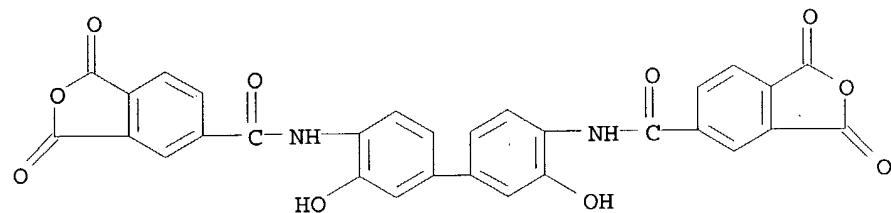
CRN 2469-55-8
CMF C10 H28 N2 O Si2



RN 257280-03-8 CAPLUS
CN 5-Isobenzofurancarboxamide, N,N'-(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)bis[1,3-dihydro-1,3-dioxo-, polymer with [5,5'-biisobenzofuran]-1,1',3,3'-tetrone, 4,4'-oxybis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyi)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

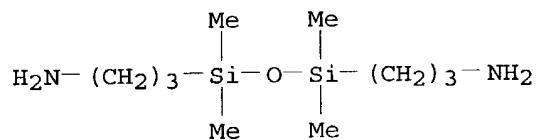
CRN 22452-77-3
CMF C30 H16 N2 O10



CM 2

CRN 2469-55-8

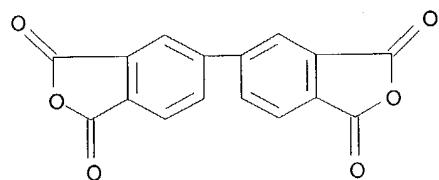
CMF C10 H28 N2 O Si2



CM 3

CRN 2420-87-3

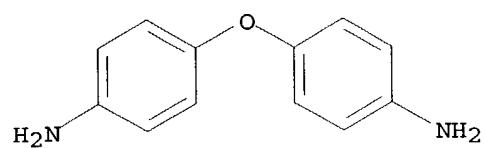
CMF C16 H6 O6



CM 4

CRN 101-80-4

CMF C12 H12 N2 O



IT 22452-77-3P 223255-30-9P

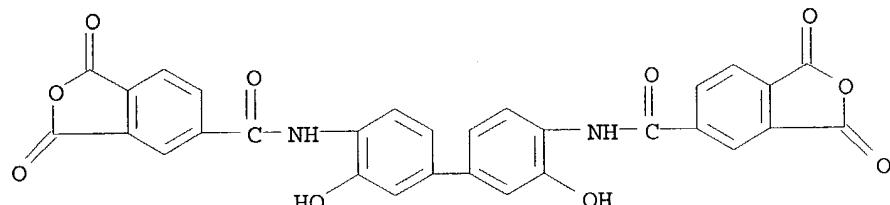
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or

engineered material use); PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)

(preparation of OH-group containing acid anhydride)

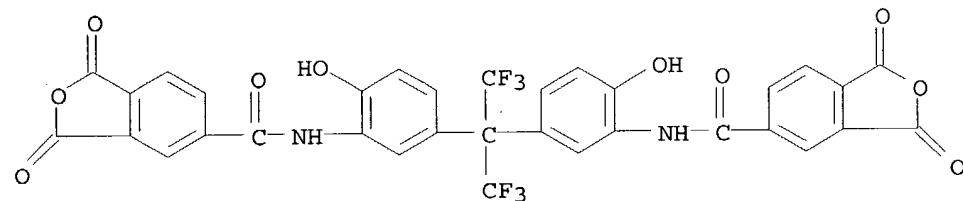
RN 22452-77-3 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM G03F007-037

ICS C08K005-28; C09D005-00; G03F007-022; H01L021-027; H01L021-312;
H01L023-29; H01L023-31; C08L079-08; C09D179-04; C09D179-08;
C08L063-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reproductive Processes)

Section cross-reference(s): 38, 42, 76

ST alk developable photosensitive heat **resistant** polymer precursor
compn; **semiconductor** buffer coating insulator pos
working polyimide photoresist

IT Heat-resistant materials

Positive photoresists

Semiconductor device fabrication

(alkaline-developable photosensitive heat-**resistant** polymer
precursor **composition**)

IT Electric insulators

(coatings; alkaline-developable photosensitive heat-**resistant**
polymer precursor **composition**)

IT Coating materials

(light-sensitive; alkaline-developable photosensitive heat-
resistant polymer precursor **composition**)

IT Polyimides, preparation

Polyimides, preparation

Polyimides, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamic acid-, fluorine-containing; alkaline-developable photosensitive heat-

heat-

resistant polymer precursor composition)

IT Polyimides, preparation

Polyimides, preparation

Polyimides, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamic acid-polyether-; alkaline-developable photosensitive heat-
resistant polymer precursor composition)

IT Fluoropolymers, preparation

Polyethers, preparation

Polyethers, preparation

Polyethers, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamic acid-polyimide-; alkaline-developable photosensitive heat-
resistant polymer precursor composition)

IT Polysiloxanes, preparation

Polysiloxanes, preparation

Polysiloxanes, preparation

Polysiloxanes, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyether-polyimide-, fluorine-containing; alkaline-developable
photosensitive

heat-resistant polymer precursor composition)

IT Polyamic acids

Polyamic acids

Polyamic acids

Polysiloxanes, preparation

Polysiloxanes, preparation

Polysiloxanes, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyether-polyimide-; alkaline-developable photosensitive heat-
resistant polymer precursor composition)

IT Fluoropolymers, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyether-polyimide-siloxane-; alkaline-developable photosensitive heat-
resistant polymer precursor composition)

IT Polyimides, preparation

Polyimides, preparation

Polyimides, preparation

Polyimides, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyether-siloxane-, fluorine-containing; alkaline-developable
photosensitive

heat-resistant polymer precursor composition)

IT Polyimides, preparation

Polyimides, preparation
Polyimides, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyether-siloxane-; alkaline-developable photosensitive heat-resistant polymer precursor composition)

IT Polyamic acids
Polyamic acids
Polyamic acids
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-, fluorine-containing; alkaline-developable photosensitive heat-resistant polymer precursor composition)

IT Polyethers, preparation
Polyethers, preparation
Polyethers, preparation
Polyethers, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-siloxane-, fluorine-containing; alkaline-developable photosensitive heat-resistant polymer precursor composition)

IT Polyethers, preparation
Polyethers, preparation
Polyethers, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyimide-siloxane-; alkaline-developable photosensitive heat-resistant polymer precursor composition)

IT 25085-92-1P, 4,4'-Diaminodiphenyl ether-benzophenonetetracarboxylic dianhydride-pyromellitic anhydride copolymer 223449-04-5P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-1,3-bis(3-aminopropyl)tetramethyldisiloxane-4,4'-diaminodiphenyl ether-trimellitic anhydride copolymer 257280-01-6P 257280-03-8P
257280-04-9P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-dicarboxydiphenyl ether chloride-isophthalic acid chloride copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(in alkaline-developable photosensitive heat-resistant polymer precursor composition)

IT 13963-57-0 14354-59-7, Aluminum tris(trifluoroacetylacetone)
14592-89-3, Chromium (III) trifluoroacetylacetone 17501-44-9,
Zirconium (IV) acetylacetone 17501-79-0, Titanium (IV) acetylacetone
25068-38-6, Epikote 828 257280-02-7
RL: TEM (Technical or engineered material use); USES (Uses)
(in alkaline-developable photosensitive heat-resistant polymer precursor composition)

IT 1204-28-0 4363-03-5, 3-Hydroxy-4-aminobiphenyl 83558-87-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of OH-group containing acid anhydride)

IT 22452-77-3P 223255-30-9P
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of OH-group containing acid anhydride)

IT 99-57-0, 2-Amino-4-nitrophenol 121-90-4, 3-Nitrobenzoic acid chloride
122-04-3, 4-Nitrobenzoylchloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of OH-group containing diamine compound)

IT 46907-17-9P 220426-92-6P
RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or
engineered material use); PREP (Preparation); RACT (Reactant or reagent);
USES (Uses)
(preparation of OH-group containing diamine compound)

L154 ANSWER 36 OF 62 CAPLUS COPYRIGHT 2004 ACS on STM

ACCESSION NUMBER: 1999:519539 CAPLUS
DOCUMENT NUMBER: 131:151779
TITLE: Positive photosensitive composition, positive
photosensitive lithographic plate and method for
forming positive image
INVENTOR(S): Urano, Toshiyuki; Murata, Akihisa; Hino, Etsuko
PATENT ASSIGNEE(S): Mitsubishi Chemical Corporation, Japan
SOURCE: Eur. Pat. Appl., 52 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 934822	A1	19990811	EP 1999-102099	19990202
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11288089	A2	19991019	JP 1999-23515	19990201
US 6200727	B1	20010313	US 1999-244206	19990204
PRIORITY APPLN. INFO.:			JP 1998-23103	A 19980204
			JP 1998-23104	A 19980204

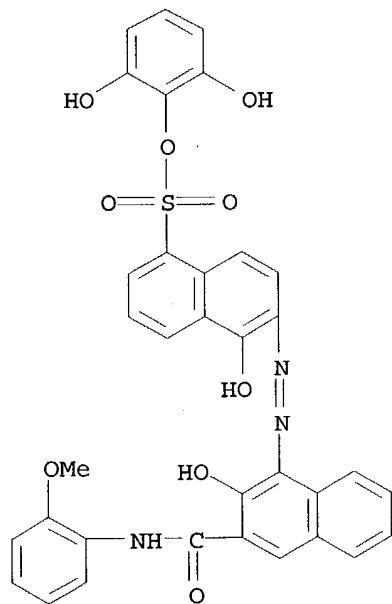
AB This invention relates to a pos. photosensitive composition useful for a lithog. plate, a color proof for print correction, a color filter resist for liquid crystal display, a resist for integrated circuits for semiconductor elements, or a copper etching resist to be used for a printed wiring board or gravure plate-making, and further relates to a photosensitive lithog. plate and a method for forming a pos. image. The pos. photosensitive composition, which contains no quinonediazide compound, comprises an alkali-soluble resin having phenolic hydroxyl groups, of which at least some are esterified, and a photothermal conversion material.

IT 235745-93-4P
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photosensitive compns. for lithog. plate and color filter preparation
containing photothermal conversion materials and)

RN 235745-93-4 CAPLUS

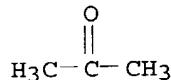
CN 1-Naphthalenesulfonic acid, 5-hydroxy-6-[[2-hydroxy-3-[(2-methoxyphenyl)amino]carbonyl]-1-naphthalenyl]azo]-, 2,6-dihydroxyphenyl ester, polymer with 2-propanone (9CI) (CA INDEX NAME)

CRN 235745-92-3
CMF C34 H25 N3 O9 S



CM 2

CRN 67-64-1
CMF C3 H6 O



IC ICM B41C001-10
ICS B41M005-36

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos photosensitive compn lithog printing plate; photoresist phenolic ester resin photothermal conversion

IT Optical filters
(color; pos. photosensitive compns. comprising esterified alkali-soluble resins having phenolic hydroxyl groups for preparation of)

IT Positive photoresists
(containing esterified alkali-soluble resins having phenolic hydroxyl groups and photothermal conversion materials)

IT Phenolic resins, preparation
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(novolak, cresol-based; pos. photosensitive compns. for lithog. plate

and color filter preparation containing photothermal conversion materials
and)

IT Liquid crystal displays
(pos. photosensitive compns. comprising esterified alkali-soluble resins
having phenolic hydroxyl groups for preparation of color filters for)

IT Printing (impact)
(pos. photosensitive compns. containing esterified alkali-soluble resins
having phenolic hydroxyl groups and photothermal conversion materials
for color proofing in)

IT Photoimaging materials
(pos.; containing esterified alkali-soluble resins having phenolic hydroxyl
groups and photothermal conversion materials)

IT Lithographic plates
(presensitized, pos.-working; containing esterified alkali-soluble resins
having phenolic hydroxyl groups and photothermal conversion materials)

IT 68400-73-7P, Formaldehyde-o-cresol-m-cresol-p-cresol copolymer
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(novolak resin; for pos. photosensitive compns. for lithog. plate and
color filter preparation)

IT 1552-42-7P, Crystal violet lactone 193687-63-7P
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); PNU
(Preparation, unclassified); PREP (Preparation); USES (Uses)
(pos. photosensitive compns. for lithog. plate and color filter preparation
comprising alkali-soluble resins having phenolic hydroxyl groups and)

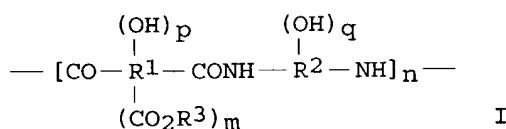
IT 235745-87-6P 235745-89-8P 235745-91-2P 235745-93-4P
235745-95-6P 235745-97-8P 235745-99-0P
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); TEM
(Technical or engineered material use); PREP (Preparation); USES (Uses)
(pos. photosensitive compns. for lithog. plate and color filter preparation
containing photothermal conversion materials and)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L154 ANSWER 37 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:253835 CAPLUS
DOCUMENT NUMBER: 130:338829
TITLE: Photosensitive heat-resistant resin
precursor composition
INVENTOR(S): Tomikawa, Masao; Yoshida, Tomoyuki; Miura, Yasuo
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11106651	A2	19990420	JP 1997-268655	19971001
PRIORITY APPLN. INFO.:			JP 1997-268655	19971001

GI



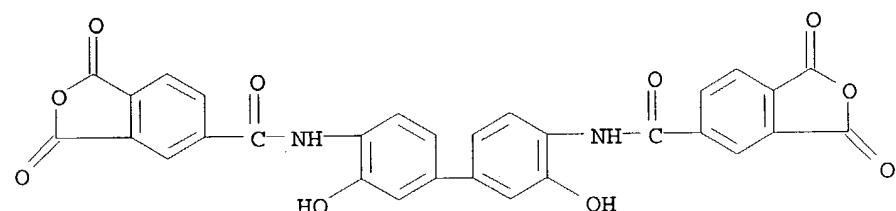
AB The title composition, useful for the formation of a surface protective film on a **semiconductor** device and an interlayer insulating film, comprises a polymer having a structural unit of I (R₁ = C_{≥2} tri- or tetra-valent organic group; R₂ = C_{≥2} divalent organic group; R₃ = OH, C₁₋₁₀ alkyl, alkoxy; n = 5-100,000; m = 1, 2; p = 1-4) and a quinonediazide compound. Thus, 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane (BAHF) 18.3 g and allylglycidyl ether 34.2 g were react to give a dianhydride, 71.4 g of which was reacted with 57.4 g of an diamine prepared from BAHF and 4-nitrobenzoyl chloride to give a hydroxy containing polyamide-polyimide photosensitive resin precursor, which was applied to a film, photoirradiated to give a film.

IT 22452-77-3P 223255-30-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(monomer; photosensitive heat-resistant resin precursor composition)

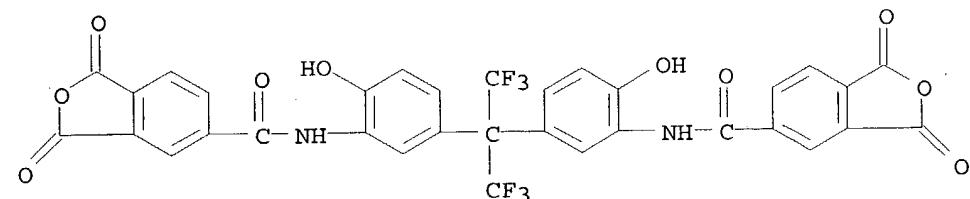
RN 22452-77-3 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



RN 223255-30-9 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IT 223652-11-7P 223652-14-0P 223652-15-1P

RL: IMF (Industrial manufacture); PREP (Preparation)
(photosensitive heat-resistant resin precursor compn)

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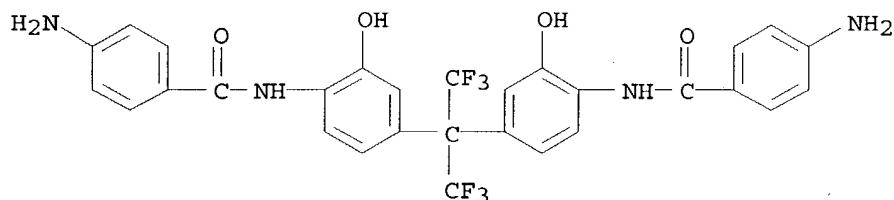
RN 223652-11-7 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(2-hydroxy-4,1-phenylene)]bis[4-aminobenzamide] (9CI) (CA INDEX NAME)

CM 1

CRN 223652-10-6

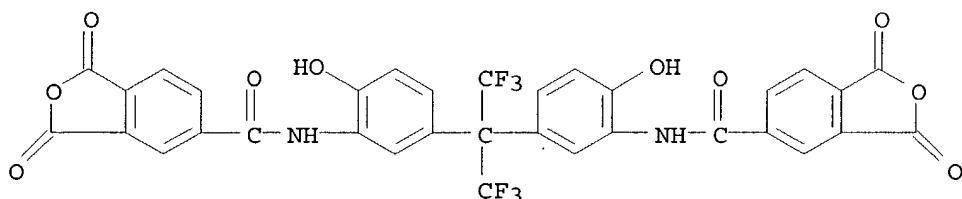
CMF C29 H22 F6 N4 O4



CM 2

CRN 223255-30-9

CMF C33 H16 F6 N2 O10



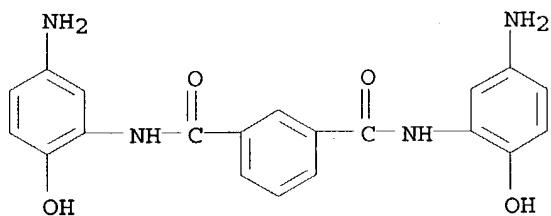
RN 223652-14-0 CAPLUS

CN 1,3-Benzenedicarboxamide, N,N'-bis(5-amino-2-hydroxyphenyl)-, polymer with N,N'-(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)bis[1,3-dihydro-1,3-dioxo-5-isobenzofurancarboxamide] (9CI) (CA INDEX NAME)

CM 1

CRN 25596-69-4

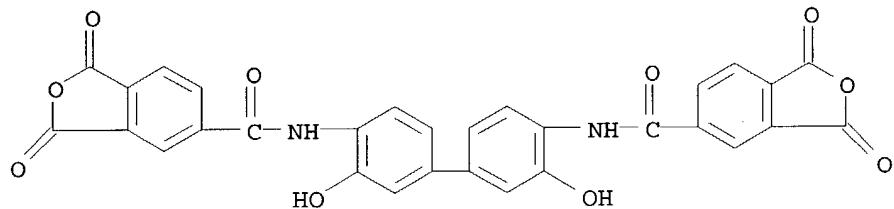
CMF C20 H18 N4 O4



CM 2

CRN 22452-77-3

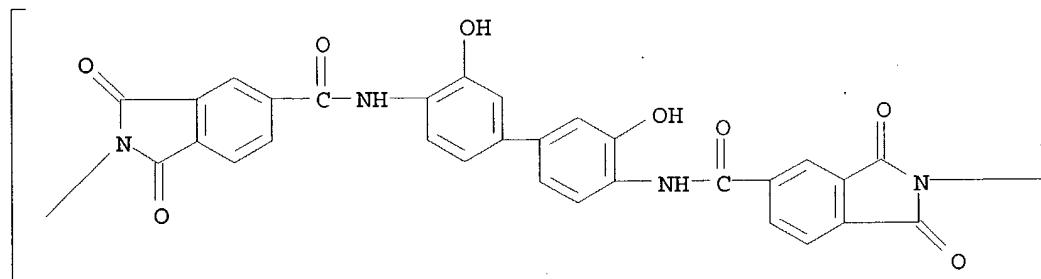
CMF C30 H16 N2 O10



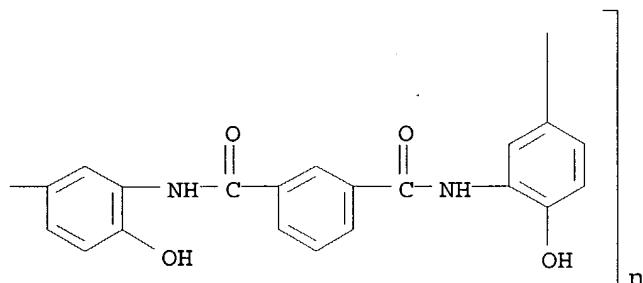
RN 223652-15-1 CAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl) carbonylimino(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl) iminocarbonyl(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl) (4-hydroxy-1,3-phenylene) iminocarbonyl-1,3-phenylenecarbonylimino(6-hydroxy-1,3-phenylene)] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



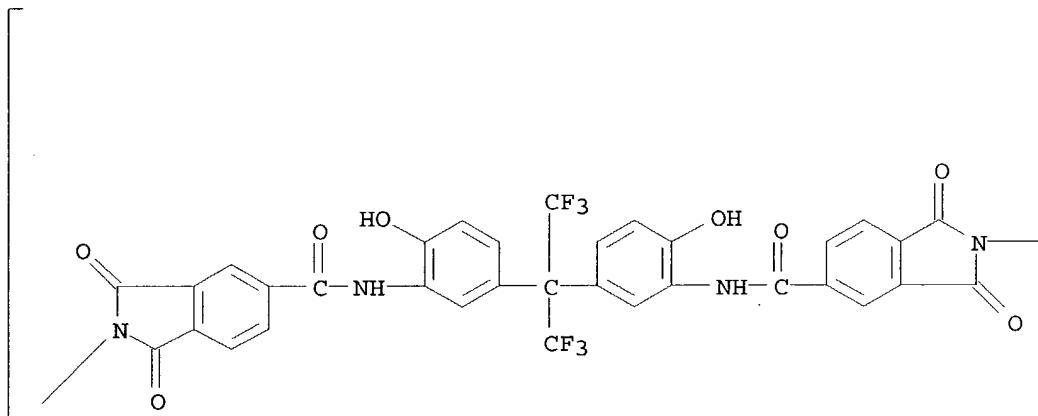
IT 223652-12-8

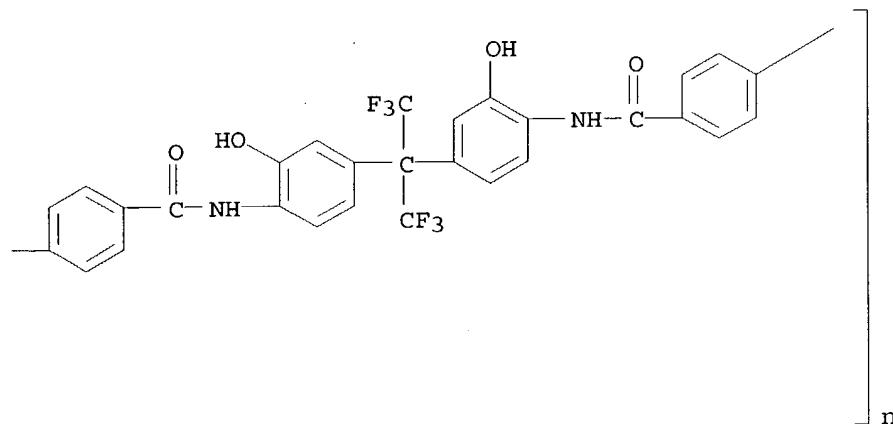
RL: RCT (Reactant); RACT (Reactant or reagent)
(photosensitive heat-**resistant** resin precursor **comprn**
.)

RN 223652-12-8 CAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)carbonylimino(6-hydroxy-1,3-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](4-hydroxy-1,3-phenylene)iminocarbonyl(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)-1,4-phenylene carbonylimino(2-hydroxy-1,4-phenylene)[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene](3-hydroxy-1,4-phenylene)iminocarbonyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A





IC ICM C08L079-08
 ICS C08K005-28

CC 37-3 (Plastics Manufacture and Processing)
 Section cross-reference(s): 74

ST hydroxy contg polyamide polyimide photosensitive heat resistant resin precursor

IT Polyimides, preparation
 Polyimides, preparation
 Polyimides, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (polyamide-, fluorine-containing; photosensitive heat-resistant resin precursor composition)

IT Polyimides, preparation
 Polyimides, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (polyamide-; photosensitive heat-resistant resin precursor composition)

IT Fluoropolymers, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (polyamide-polyimide-; photosensitive heat-resistant resin precursor composition)

IT Polyamides, preparation
 Polyamides, preparation
 Polyamides, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (polyimide-, fluorine-containing; photosensitive heat-resistant resin precursor composition)

IT Polyamides, preparation
 Polyamides, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (polyimide-; photosensitive heat-resistant resin precursor composition)

IT 22452-77-3P 25596-69-4P 223255-30-9P 223652-10-6P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (monomer; photosensitive heat-resistant resin precursor composition)

IT 223652-11-7P 223652-14-0P 223652-15-1P
RL: IMF (Industrial manufacture); PREP (Preparation)
(photosensitive heat-resistant resin precursor compn
)

IT 223652-12-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(photosensitive heat-resistant resin precursor compn
)

IT 99-57-0, 2-Amino-4-nitrophenol 99-63-8, Isophthalic acid chloride
122-04-3, 4-Nitrobenzoylchloride 1204-28-0, Trimellitic anhydride
chloride 4363-03-5, 3-Hydroxy-4-aminobiphenyl 83558-87-6,
2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; photosensitive heat-resistant resin
precursor composition)

L154 ANSWER 38 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:241947 CAPLUS
DOCUMENT NUMBER: 130:297410
TITLE: Composition of photosensitive polyimide precursor
INVENTOR(S): Tomikawa, Masao; Yoshida, Tomoyuki; Miura, Yasuo
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11100503	A2	19990413	JP 1998-198425	19980714
JP 3440832	B2	20030825		
PRIORITY APPLN. INFO.:			JP 1997-188456	A 19970714
			JP 1997-206125	A 19970731

AB The invention provides a composition of an alkaline developable photosensitive polyimide precursor, suited for use in preparing a protective film on the surfaces of semiconductor devices, thus the composition comprises quinondiazide compds. and polymers having the unit structure represented by $[COR_1(OH)_p(COOR_3)_mCONHR_2NH]_n$ [R₁ = 4- to 8-valent group containing ≥ 2 carbons; R₂ = divalent group containing ≥ 2 carbons; R₃ = H, C₁₋₂₀ group; n = 10-100000; m = 1 or 2; p = 1-4 integer].

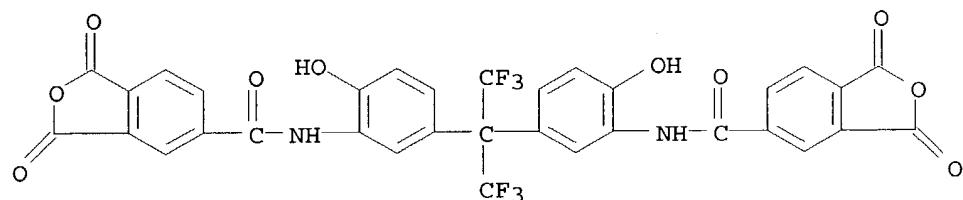
IT 223255-31-0 223255-38-7, Bis(4-(4-aminophenoxy)phenyl)sulfone-1,3-bis(3-aminopropyl)tetramethyldisiloxane-par₆ copolymer

RL: POF (Polymer in formulation); USES (Uses)
(composition of photosensitive polyimide precursor)

RN 223255-31-0 CAPLUS
CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo-, polymer with [5,5'-biisobenzofuran]-1,1',3,3'-tetrone, 2,2'-bis(trifluoromethyl)[1,1'-biphenyl]-4,4'-diamine, 4,4'-(sulfonylbis(4,1-phenyleneoxy))bis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

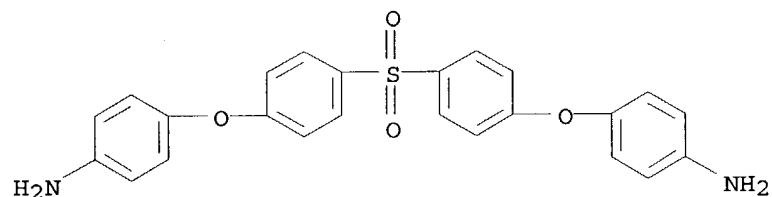
CM 1

CRN 223255-30-9
CMF C33 H16 F6 N2 O10



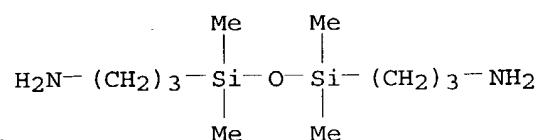
CM 2

CRN 13080-89-2
CMF C24 H20 N2 O4 S



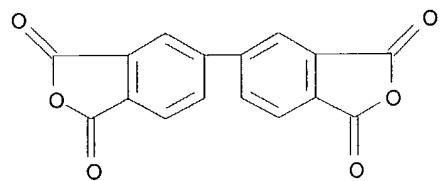
CM 3

CRN 2469-55-8
CMF C10 H28 N2 O Si2



CM 4

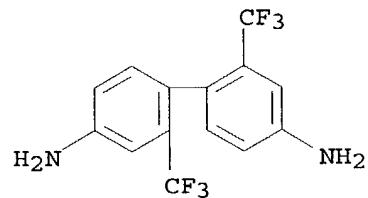
CRN 2420-87-3
CMF C16 H6 O6



CM 5

CRN 341-58-2

CMF C14 H10 F6 N2



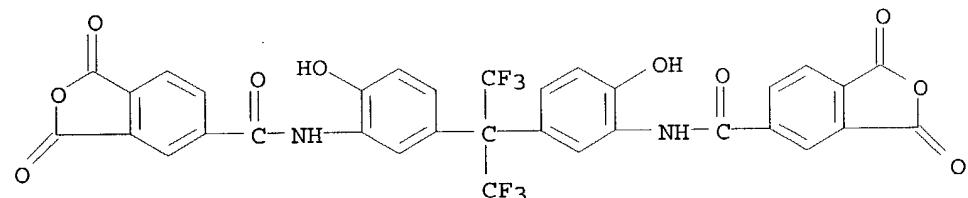
RN 223255-38-7 CAPLUS

CN 5-Isobenzofurancarboxamide, N,N'-[{2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-[sulfonylbis(4,1-phenyleneoxy)]bis[benzenamine] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediy1)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 223255-30-9

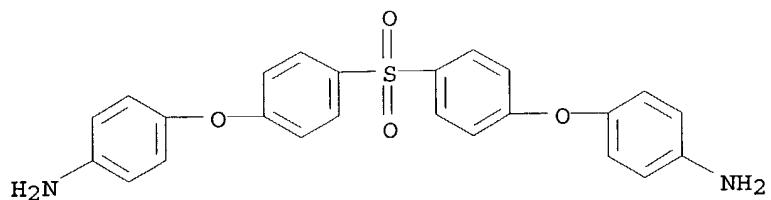
CMF C33 H16 F6 N2 O10



CM 2

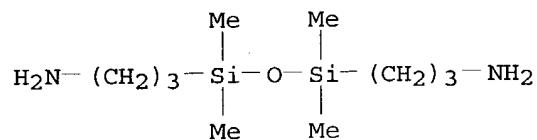
CRN 13080-89-2

CMF C24 H20 N2 O4 S

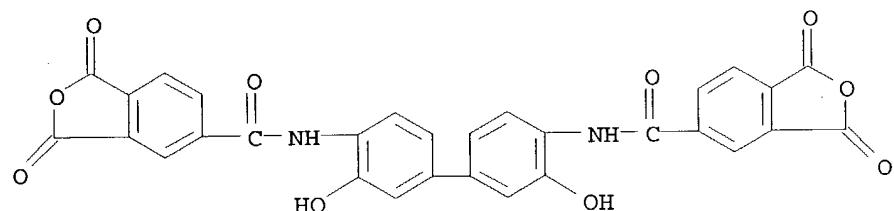


CM 3

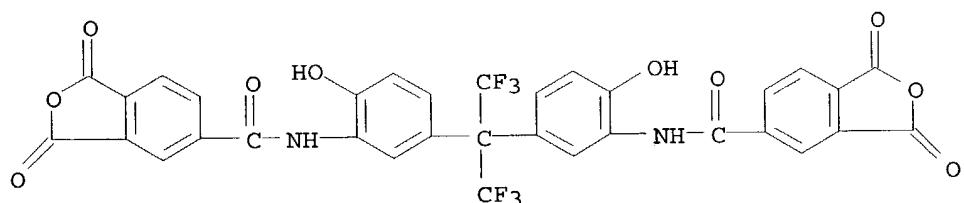
CRN 2469-55-8
CMF C10 H28 N2 O Si2



IT 22452-77-3P 223255-30-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(composition of photosensitive polyimide precursor)
RN 22452-77-3 CAPLUS
CN 5-Isobenzofurancarboxamide, N,N'-(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



RN 223255-30-9 CAPLUS
CN 5-Isobenzofurancarboxamide, N,N'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)bis[1,3-dihydro-1,3-dioxo- (9CI) (CA INDEX NAME)



IC ICM C08L079-08
ICS C08K005-28
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 74, 76
ST compn photosensitive polyimide precursor alk developable quinondiazide
IT **Photoresists**
 (composition of photosensitive polyimide precursor)
IT Polyimides, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (composition of photosensitive polyimide precursor)
IT 32155-33-2 37829-64-4 180888-28-2 223267-42-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (composition of photosensitive polyimide precursor)
IT 105921-05-9 223255-22-9, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropene-4,4'-diaminodiphenyl ether-trimellitic anhydride copolymer
223255-24-1, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-1,3-bis(3-aminopropyl)tetramethyl disiloxane-2,2'-bis(trifluoromethyl)benzidine-trimellitic anhydride chloride copolymer 223255-26-3,
4,4'-Diaminodiphenyl ether-2,4-diamino-6-hydroxypyrimidine-trimellitic anhydride copolymer 223255-28-5, 4,4'-Benzophenonetetracarboxylic acid dianhydride-2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane-1,3-bis(3-aminopropyl)tetramethyl disiloxane-2,2'-bis(trifluoromethyl)benzidine-4,4'-diaminodiphenylether-paraphenylenediamine-trimellitic anhydride chloride copolymer 223255-31-0 223255-36-5, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-1,3-bis(3-aminopropyl)tetramethyl disiloxane-2,2'-bis(trifluoromethyl)benzidine-4,4'-diaminodiphenylether-trimellitic anhydride chloride copolymer 223255-38-7, Bis(4-(4-aminophenoxy)phenyl)sulfone-1,3-bis(3-aminopropyl)tetramethyl disiloxane-par6 copolymer
 RL: POF (Polymer in formulation); USES (Uses)
 (composition of photosensitive polyimide precursor)
IT 1204-28-0, Trimellitic anhydride chloride 4363-03-5,
3-Hydroxy-4-aminobiphenyl 83558-87-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (composition of photosensitive polyimide precursor)
IT 22452-77-3P 223255-30-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (composition of photosensitive polyimide precursor)

L154 ANSWER 39 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:440075 CAPLUS

DOCUMENT NUMBER: 127:115282

TITLE: Manufacture of LSI circuit using water-soluble positive-working **photoresist** composition

INVENTOR(S): Maekawa, Yasunari; Miwa, Takao; Okabe, Yoshiaki; Ishida, Mina; Hirano, Toshinori

PATENT ASSIGNEE(S): Hitachi, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09134003	A2	19970520	JP 1995-290841	19951109
PRIORITY APPLN. INFO.:			JP 1995-290841	19951109
AB	The title manufacture comprises (1) a process to coat a substrate with a photosensitive composition which comprises carboxylic acid polymers (-R1(R2)(COOH)-n [R1 = C2-20 organic group; n = 10-20,000; R2 = C1-20 organic group, H, halo], (secondary- and/or tertiary-)amines, photobase generators, and base generators, (2) a process to irradiate the coating via a photomask and (3) a process to develop the exposed coating. The manufacture is also applied to manufacture a liquid crystal display orientation layer.			
IT 191674-52-9P	RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (water-soluble pos.-working photoresist composition for manufacturing LSI circuit)			
RN 191674-52-9 CAPLUS				
CN Poly[iminocarbonyl-1,3-phenylene carbonylimino[3,3'-bis[[9H-fluoren-9-ylmethoxy]carbonyl]oxy][1,1'-biphenyl]-4,4'-diyl]] (9CI) (CA INDEX NAME)				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

IC ICM G03F007-004	ICS G02F001-1337; G03F007-039; H01L021-027; H01L021-312
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)	Section cross-reference(s): 38, 76
ST LSI circuit pos working photoresist; liq crystal display orientation layer	
IT Integrated circuits	
IT Liquid crystal displays	
IT Photolithography	
IT Positive photoresists	(manufacture of LSI circuit using water-soluble pos.-working photoresist composition)
IT Polyamic acids	RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (water-soluble pos.-working photoresist composition for manufacturing LSI circuit)
IT Polyimides, uses	RL: TEM (Technical or engineered material use); USES (Uses) (water-soluble pos.-working photoresist composition for manufacturing LSI circuit)
IT 89-32-7 1795-48-8 5704-20-1 13635-04-6 15205-66-0, 2-Methylsulfonylethanol 24324-17-2, 9-Fluorenylmethanol	RL: RCT (Reactant); RACT (Reactant or reagent) (water-soluble pos.-working photoresist composition for)

manufacturing LSI circuit)

IT 27026-22-8P 191589-78-3P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (water-soluble pos.-working photoresist composition for manufacturing LSI circuit)

IT 25736-02-1P, p,p'-Diaminodiphenyl ether-oxydiphthalic acid dianhydride copolymer 26298-81-7P, 3,3',4,4'-Biphenyltetracarboxylic acid dianhydride- p,p'-diaminodiphenyl ether copolymer 29319-17-3P, 1,2,3,4-Cyclopentanetetracarboxylic dianhydride- p,p'-diaminodiphenyl ether copolymer 32824-24-1P, Oxydiphthalic acid dianhydride-p-xylylenediamine copolymer 74230-25-4P, Oxydiphthalic anhydride-phenylenediamine copolymer 180613-42-7P 187838-40-0P 191589-65-8P 191589-73-8P 191589-80-7P 191589-83-0P 191589-87-4P 191674-52-9P 191674-57-4P 191674-61-0P 191674-64-3P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (water-soluble pos.-working photoresist composition for manufacturing LSI circuit)

IT 191589-68-1 191589-92-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (water-soluble pos.-working photoresist composition for manufacturing LSI circuit)

L154 ANSWER 40 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:102980 CAPLUS
 DOCUMENT NUMBER: 118:102980
 TITLE: Preparation of polybenzoxazoles, polybenzimidazoles, and polybenzothiazoles
 INVENTOR(S): Perry, Robert J.
 PATENT ASSIGNEE(S): Eastman Kodak Co., USA
 SOURCE: U.S., 12 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5149755	A	19920922	US 1991-726437	19910705
CA 2070269	AA	19930106	CA 1992-2070269	19920602
EP 522469	A2	19930113	EP 1992-111331	19920703
EP 522469	A3	19930929		
R: DE, FR, GB				
JP 05262877	A2	19931012	JP 1992-177306	19920706
US 1991-726437				
19910705				

PRIORITY APPLN. INFO.: AB The polymers are prepared in presence of a catalyst (compds. of Pt, Ni or Pd) and solvent by reaction of CO, aromatic halide X₁Ar₁Z₁, aromatic amine Z₂Ar₂M₁ (X₁, Z₁, Z₂, M₁ are non-ortho; one of Z₁ and Z₂ is X₂ and the other is M₂; Ar₁ and Ar₂ are aromatic and heteroarom. 6-20 ring-atom moieties; X₁ and X₂ are independently I and Br; M₁ and M₂ are independently moieties having an NH₂ group, and ortho to NH₂, a group from NH₂, OH and SH. Thus, a precyclization polymer was prepared from 4,4'-diiododiphenyl ether, 3,3',4,4'-tetraaminobiphenyl, and CO (7.7

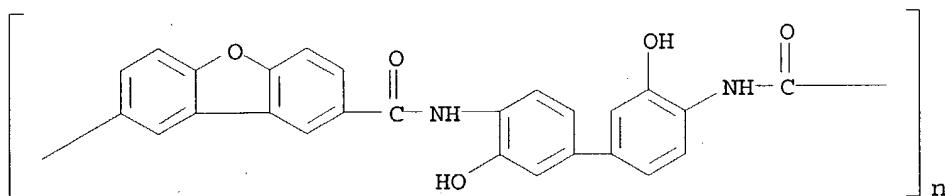
kg/cm²) in AcNMe₂ in presence of bis(triphenylphosphine)palladium(II) chloride/Ph₃P catalyst and base at 120°. Curing to the cyclized polymer was at 100-325°.

IT 146167-65-9P

RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and cyclization of)

RN 146167-65-9 CAPLUS

CN Poly[2,8-dibenzofurandiylicarbonylimino(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)iminocarbonyl] (9CI) (CA INDEX NAME)



IC ICM C08G073-18

ICS C08G073-22; C08G075-32

NCL 528210000

CC 35-5 (Chemistry of Synthetic High Polymers)

ST **polybenzoxazole** prepn cyclopolymer carbonylation;
polybenzothiazole prepn; polybenzimidazole prepn

IT Carbonylation

(Heck, heterocyclization and, in preparation of benzimidazole, -oxazole, and -thiazole polymers)

IT Polybenzimidazoles

Polybenzoxazoles

RL: PREP (Preparation)

(preparation of, by carbonylation/heterocyclopolymer. and ring closure)

IT Polymerization catalysts

(cyclo-, hetero, carbonylation and, compds. of palladium, for preparation of benzimidazole, -oxazole and -thiazole polymers)

IT Polymerization

(cyclo-, hetero, carbonylation and, in preparation of benzimidazole, -oxazole, and -thiazole polymers)

IT Polymers, preparation

RL: PREP (Preparation)

(polybenzothiazoles, preparation of, by carbonylation/heterocyclopolymer. and ring closure)

IT Cyclocondensation reaction

(thermal, of precursors in preparation of benzimidazole, -oxazole, and -thiazole polymers)

IT 603-35-0, Triphenylphosphine, uses 1663-45-2, 1,2-

Bis(diphenylphosphino)ethane 3375-31-3, Palladium diacetate

7440-02-0D, Nickel, compds. 7440-05-3D, Palladium, compds. 7440-06-4D,

Platinum, compds. 7647-10-1, Palladium dichloride 7790-38-7, Palladium

diiodide 12257-74-8 13444-94-5, Palladium dibromide 13965-03-2

14024-61-4 19978-61-1 29964-62-3 31277-98-2 31989-49-8

51364-51-3 59831-02-6 72287-26-4 106584-00-3

RL: USES (Uses)

(carbonylation/heterocyclopolymer. catalysts, for preparation of benzimidazole, -oxazole and -thiazole polymers)

IT 25734-65-0P 25868-24-0P 25868-25-1P 32109-44-7P 89718-41-2P,
 Poly(2,5-benzoxazolediyl) 108389-04-4P 112480-78-1P 112480-83-8P
 146167-66-0P 146167-67-1P 146167-69-3P 146185-34-4P 146185-36-6P
 146185-39-9P 146185-40-2P
 RL: PREP (Preparation)
 (prepared of, cured, catalysts for)

IT 146116-56-5P 146116-57-6P 146116-58-7P 146116-59-8P 146116-60-1P
 146116-61-2P 146116-62-3P 146116-63-4P 146116-64-5P 146116-65-6P
 146116-66-7P 146116-67-8P 146116-68-9P 146162-73-4P 146162-74-5P
 146288-94-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and curing of, catalysts for)

IT 27026-22-8P 27026-23-9P 68491-51-0P 75433-42-0P 92450-78-7P
 112480-82-7P 113339-21-2P 145267-60-3P 146167-65-9P
 146167-68-2P 146185-33-3P 146185-35-5P 146185-37-7P 146185-38-8P
 146186-11-0P
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and cyclization of)

L154 ANSWER 41 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:90768 CAPLUS
 DOCUMENT NUMBER: 118:90768
 TITLE: Electrophotographic imaging method
 INVENTOR(S): Inoue, Tomohiro; Fukagai, Toshio; Suzuki, Kayoko;
 Adachi, Hiroshi; Shimada, Tomoyuki; Ariga, Tamotsu;
 Sasaki, Masaomi
 PATENT ASSIGNEE(S): Ricoh K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04063352	A2	19920228	JP 1990-175559	19900702

PRIORITY APPLN. INFO.: JP 1990-175559 19900702

AB In obtaining multiple photocopies by uniformly changing an organic photoreceptor, imagewise exposing, developing, transforming the toner image to plain paper, removing the residual charge, blade cleaning the photoreceptor, and repeating the process, the photoreceptor is characterized by the relation $\eta = \eta_0 E^n$ [η_0 = constant, η = electrophotog. quantum efficiency, E = elec. field intensity] with $n \geq 0.5$. In the composite-type photoreceptor, the ionization p.d. between the charge-generating material and the charge-transporting material (ΔZ_p) is ≤ 0.25 eV. Even when the photoconductor layer thickness diminishes upon repeated blade cleaning, the sensitivity of the photoreceptor does not diminish.

IT 135875-93-3 145004-63-3

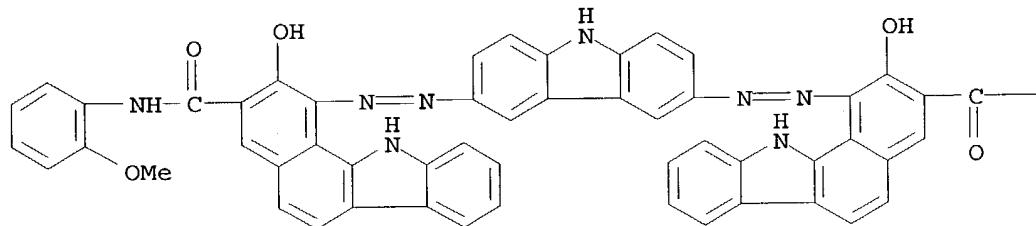
RL: USES (Uses)
 (charge-generating material, for blade-cleaning-resistant
 electrophotog. photoreceptor)

RN 135875-93-3 CAPLUS

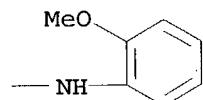
CN 11H-Benz[a]carbazole-3-carboxamide, 1,1'-(9H-carbazole-3,6-

diylbis(azo)]bis[2-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



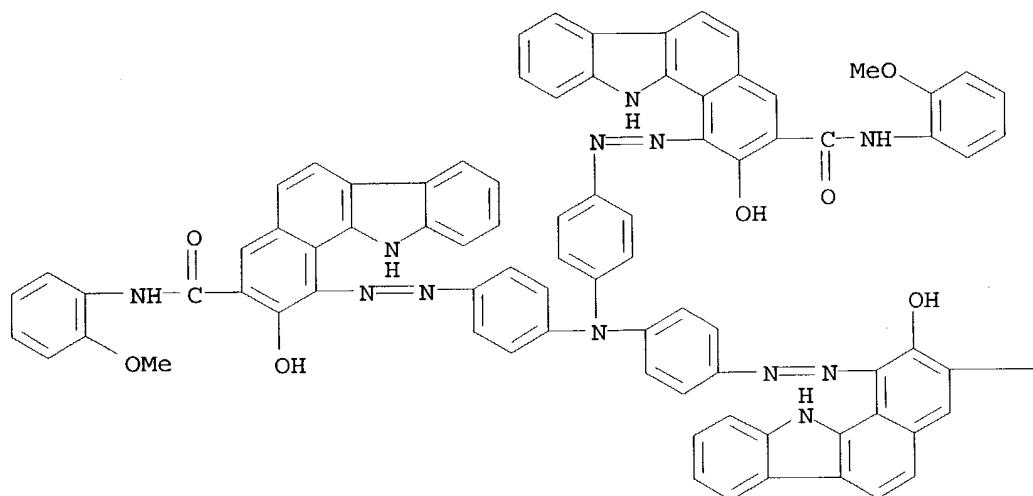
PAGE 1-B



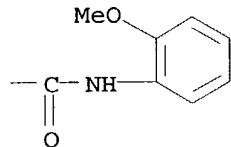
RN 145004-63-3 CAPLUS

CN 11H-Benz[a]carbazole-3-carboxamide, 1,1',1'''-[nitrilotris(4,1-phenyleneazo)]tris[2-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



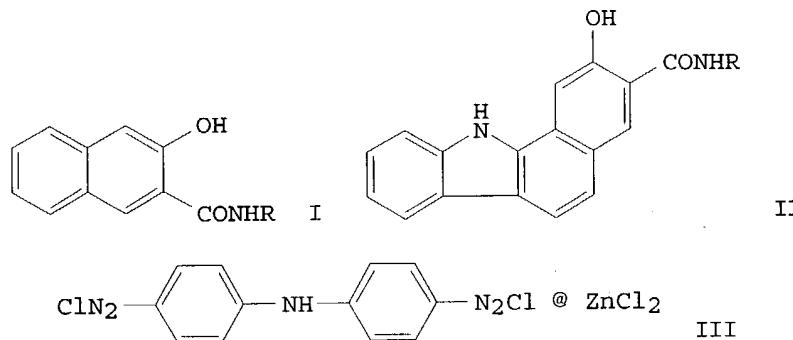
PAGE 1-B



IC ICM G03G005-04
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST electrophotog photoreceptor composite blade cleaning
 IT Electrophotographic photoconductors and photoreceptors
 (composite-type, blade-cleaning **resistant**)
 IT 69534-94-7 84809-01-8 89548-48-1 94239-76-6 115105-08-3
 125286-61-5 135691-67-7 **135875-93-3** 137866-04-7
 137866-09-2 145004-58-6 145004-59-7 145004-60-0 145004-61-1
 145004-62-2 **145004-63-3** 145849-42-9
 RL: USES (Uses)
 (charge-generating material, for blade-cleaning-resistant
 electrophotog. photoreceptor)
 IT 41578-11-4 57609-72-0 75232-44-9 89114-90-9 89114-91-0
 RL: USES (Uses)
 (charge-transporting material, for blade-cleaning-resistant
 electrophotog. photoreceptor)

L154 ANSWER 42 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1992:49027 CAPLUS
 DOCUMENT NUMBER: 116:49027
 TITLE: Optical information copying media
 INVENTOR(S): Mori, Toshiharu; Oshima, Kiyotaka
 PATENT ASSIGNEE(S): Hitachi Maxell, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03210552	A2	19910913	JP 1990-6856	19900116
PRIORITY APPLN. INFO.:			JP 1990-6856	19900116
GI				



AB Information copying media with dot pattern of different reflectivity, formed by exposure and development, use materials having photosensitive layer containing diazonium salts with ≥ 2 diazo groups in the mol. and couplers I or II (R = Ph, Ph substituted by alkyl, halo, alkoxy, nitro or cyano groups, morpholino, morpholino substituted by alkyl, halo, alkoxy, nitro or cyano groups). These media for information reading can be produced easily and read by 780-nm beam of **semiconductor** lasers. Thus, a solution containing 0.13 g III, 0.18 g coupler I (R = m-nitrophenyl),

and antioxidants, was applied on Al-deposited PET film. Obtained film was patternwise exposed through a photomask to UV and developed with NH₃. III is decomposed in the exposed part, and couples with the coupler to form a bisazo dye in the unexposed part, to form dot pattern with different reflectivity.

IT 138323-61-2

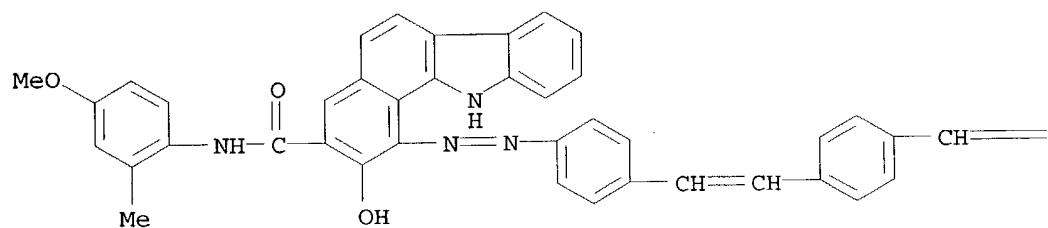
RL: USES (Uses)

(developed photosensitive material for copying optical information containing)

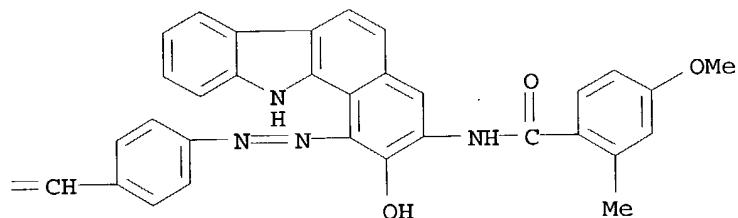
RN 138323-61-2 CAPLUS

CN 11H-Benz[a]carbazole-3-carboxamide, 2-hydroxy-1-[(4-[(2-[(4-methoxy-2-methylbenzoyl)amino]-11H-benzo[a]carbazol-1-yl)azo]phenyl]ethenyl]phenyl]ethenyl]phenyl]azo]-N-(4-methoxy-2-methylphenyl)- (9CI) (CA INDEX NAME)

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PAGE 1-B



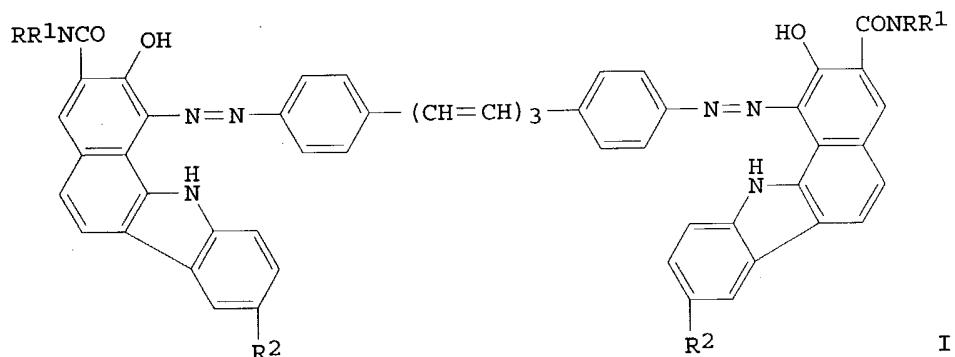
IC ICM G03C001-52
 ICS G03C001-54; G11B007-24
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST optical information copying media photosensitive
 IT Diazo process
 (preparation of laser-readable information storage materials by)
 IT Recording materials
 (optical, diazo-containing, for copying of optical information)
 IT 138323-60-1 138323-61-2 138323-62-3
 RL: USES (Uses)
 (developed photosensitive material for copying optical information containing)
 IT 17776-79-3 138323-59-8
 RL: USES (Uses)
 (photosensitive material for copying optical information containing
 couplers and)
 IT 92-78-4 135-65-9 5840-22-2
 RL: USES (Uses)
 (photosensitive material for copying optical information containing diazo
 compds. and)

L154 ANSWER 43 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:641496 CAPLUS
 DOCUMENT NUMBER: 113:241496
 TITLE: Electrophotographic photoreceptors using bisazo
 pigment as charge-generating agent
 INVENTOR(S): Sasaki, Masaomi; Shimada, Tomoyuki; Hashimoto, Mitsuru
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02134645	A2	19900523	JP 1988-288546	19881114
JP 2731555	B2	19980325		
US 5097022	A	19920317	US 1989-431233	19891103
PRIORITY APPLN. INFO.:			JP 1988-288546	19881114
			JP 1988-288547	19881114

GI



I

AB The title photoreceptors comprise a conductive support with a coating of a layer containing a bisazo pigment I [R = (substituted) aryl, R1 = H, (substituted) alkyl; R2 = halo, (substituted) alkyl, alkoxy, acyl, substituted amino, CN, NO2]. The photoreceptors show high sensitivity in the regions of visible light and **semiconductor** laser wavelength. Thus, a photoreceptor was prepared by using an Al-deposited polyester film, a charge-generating layer containing I (R = C6H4Cl-*o*, R1 = H, R2 = Cl) and a charge-transporting layer containing 9-ethylcarbazole-3-aldehyde-1-methyl-1-phenylhydrazone.

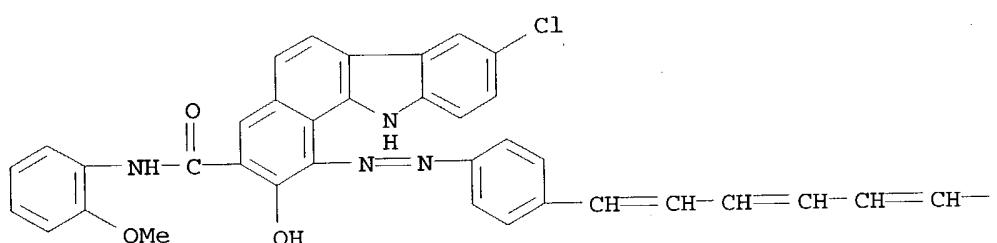
IT 130018-19-8

RL: USES (Uses)
(charge-generating agent, electrophotog. photoreceptor using)

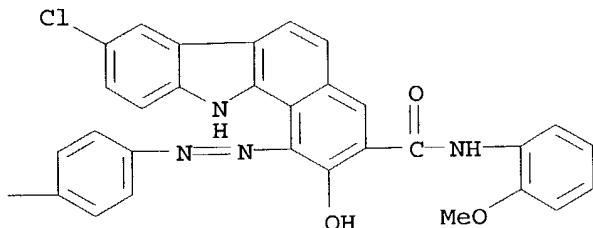
RN 130018-19-8 CAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1'-[1,3,5-hexatriene-1,6-diyl]bis(4,1-phenyleneazo)]bis[8-chloro-2-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)

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IC ICM G03G005-06
 ICS C09K009-02
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 41
 ST electrophotog photoreceptor charge generating agent; bisazo pigment
 electrophotog photoreceptor; phenylhexatriene deriv electrophotog
 photoreceptor; carbazole deriv electrophotog photoreceptor
 IT Pigments
 (azo, bis-, as charge-generating agent in electrophotog. photoreceptor)
 IT Electrophotographic photoconductors
 (using bisazo pigment as charge-generating agent)
 IT 124906-45-2 124906-46-3 124906-59-8 130018-17-6 130018-18-7
 130018-19-8 130018-20-1 130018-21-2 130018-22-3
 130018-23-4 130018-24-5 130018-25-6 130018-26-7 130018-27-8
 130018-28-9
 RL: USES (Uses)
 (charge-generating agent, electrophotog. photoreceptor using)
 IT 41578-11-4 53332-49-3 75232-44-9 95304-21-5, α -Phenyl-4'-N,N'-diphenylaminostilbene
 RL: USES (Uses)
 (charge-transporting agent, electrophotog. photoreceptor using)
 IT 130018-16-5P
 RL: PREP (Preparation)
 (preparation of, charge-generating agent, electrophotog. photoreceptor using)
 IT 89548-21-0, 1,6-Diphenyl-1,3,5-hexatriene-4',4"-bis(diazonium tetrafluoroborate) 117826-87-6
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, for bisazo pigment preparation)

L154 ANSWER 44 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:523798 CAPLUS
 DOCUMENT NUMBER: 111:123798
 TITLE: Electrophotographic photoreceptors containing a bisazo pigment as a charge-generating agent
 INVENTOR(S): Haino, Kozo; Enomoto, Kazuhiro
 PATENT ASSIGNEE(S): Mitsubishi Paper Mills, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho; 9 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01065558	A2	19890310	JP 1987-222731	19870904
PRIORITY APPLN. INFO.:			JP 1987-222731	19870904
GI				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Electrophotog. photoreceptors have on a conductive support a layer containing, as a charge-generating agent, a bisazo pigment I [R = coupler residue; R1-2 = H, halo, alkyl, alkoxy; R3 = H, halo, CN, (substituted) acyl, alkyl, alkoxy, aryl; n = 1-5]. The photoreceptors exhibit high sensitivity toward white light, emission diodes, and **semiconductor** lasers and good cyclicability. Thus, Metalumy (Al-deposited film) was coated with a composition containing II and Vylon 200 (polyester resin) and overcoated with a composition containing p-diethylaminobenzaldehyde diphenylhydrazone and Panlite L-1250 (polycarbonate resin) to give a photoreceptor showing good sensitivity and cyclicability.

IT 122371-06-6

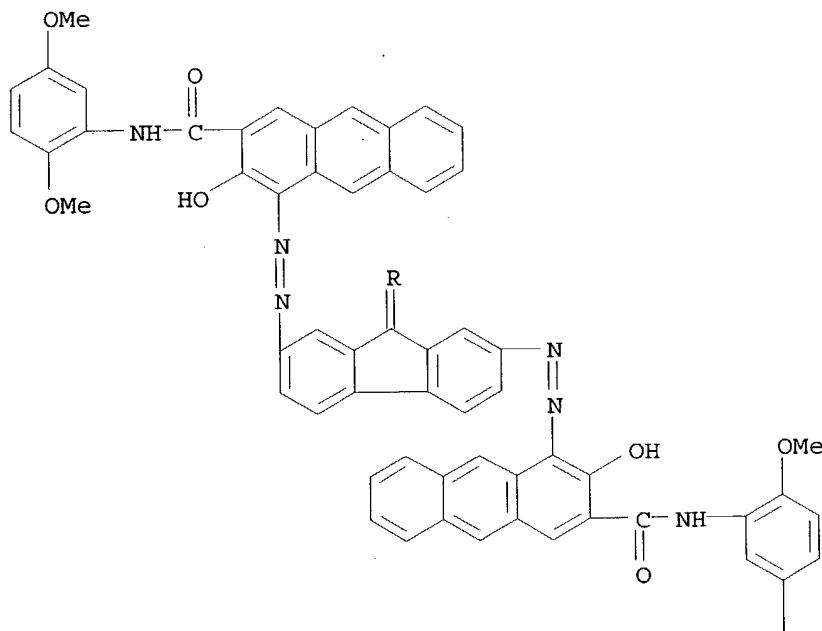
RL: 'USES' (Uses)

(charge generating agent, for electrophotog. photoreceptor)

RN 122371-06-6 CAPLUS

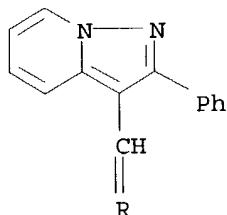
CN 2-Anthracenecarboxamide, 4,4'-(9-[(2-phenylpyrazolo[1,5-a]pyridin-3-yl)methylene]-9H-fluorene-2,7-diyl)bis(azo)bis[N-(2,5-dimethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)

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OMe

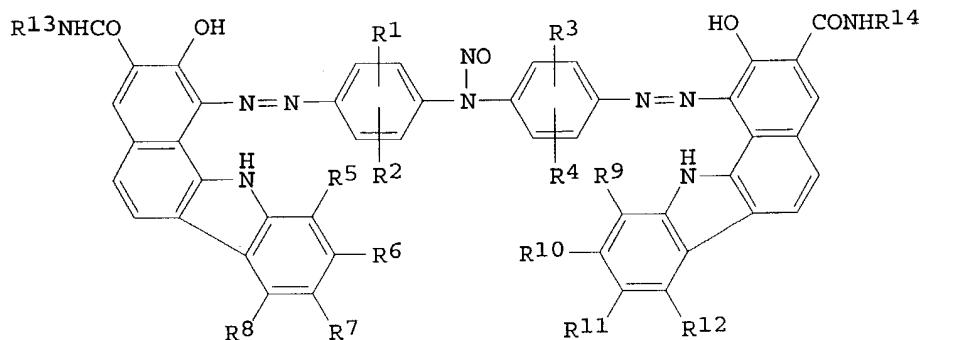


IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST electrophotog photoreceptor charge generating agent; bisazo pigment
 electrophotog photoreceptor
 IT Electrophotographic photoconductors
 (charge generating agents, bisazo pigments as, with high sensitivity and cyclicability)
 IT 122371-02-2 122371-03-3 122371-04-4 122371-05-5 **122371-06-6**
 122371-07-7 122371-08-8 122371-09-9 122371-10-2 122371-11-3
 RL: USES (Uses)
 (charge generating agent, for electrophotog. photoreceptor)
 IT 53332-49-3 68189-23-1, p-Diethylaminobenzaldehyde diphenylhydrazone
 RL: USES (Uses)
 (charge transporting agent, for electrophotog. photoreceptor)
 IT 122371-12-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, bisazo pigment from, for electrophotog. photoreceptor)

L154 ANSWER 45 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1988:580362 CAPLUS
 DOCUMENT NUMBER: 109:180362
 TITLE: Electrophotographic photoreceptors containing bisazo pigments
 INVENTOR(S): Matsumoto, Masakazu
 PATENT ASSIGNEE(S): Canon K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63027851	A2	19880205	JP 1986-172582	19860722
PRIORITY APPLN. INFO.:			JP 1986-172582	19860722

GI



AB The claimed electrophotog. photoreceptors contain bisazo pigments I [R1-R12 = H, halo, alkyl, aralkyl, alkoxy, NO₂, CN, CF₃, substituted amino; adjacent pair(s) selected from R5-R12 may form a condensed ring; R12 = alkoxyphenyl, alkylphenyl; R13 = nitrophenyl, cyanophenyl, halophenyl]. The photoreceptors show good sensitivity toward visible and near IR light and hence can be used in conventional copying machines and semiconductor laser printers.

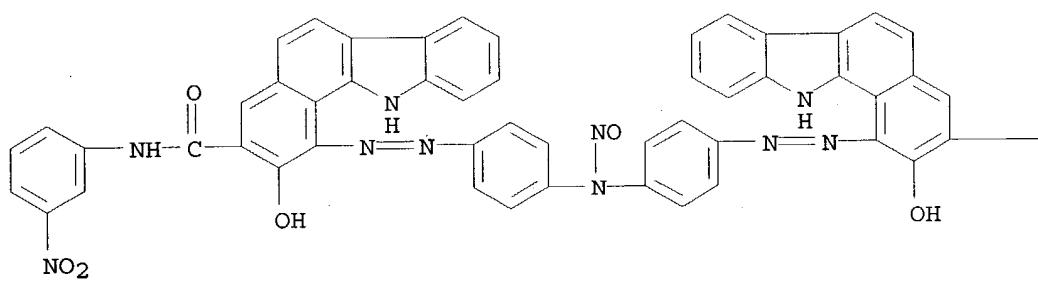
IT 117008-95-4

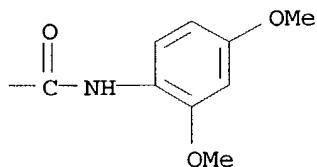
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge carrier-generating pigment)

RN 117008-95-4 CAPPLUS

CN 11H-Benz[a]carbazole-3-carboxamide, 1-[[4-[[4-[[3-[[[(2,4-dimethoxyphenyl)amino]carbonyl]-2-hydroxy-11H-benzo[a]carbazol-1-yl]azo]phenyl]nitrosoamino]phenyl]azo]-2-hydroxy-N-(3-nitrophenyl)- (9CI)
(CA INDEX NAME)

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IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 41
 ST electrophotog photoconductor bisazo pigment; laser printer electrophotog photoreceptor
 IT Electrophotographic photoconductors
 (composite, charge carrier-generating bisazo pigments for)
 IT 537-65-5, 4,4'-Diaminodiphenylamine
 RL: USES (Uses)
 (diazotization and coupling reaction of, electrophotog. charge carrier-generating pigment from)
 IT 117008-87-4 117008-88-5 117008-89-6 117008-90-9 117008-91-0
 117008-92-1 117008-93-2 117008-94-3 **117008-95-4**
 117008-96-5 117008-97-6 117008-98-7 117008-99-8 117009-00-4
 117009-01-5 117009-02-6 117009-03-7 117009-04-8 117009-05-9
 117009-06-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electrophotog. charge carrier-generating pigment)
 IT 129-79-3, 2,4,7-Trinitro-9-fluorenone 25067-59-8, Poly(N-vinylcarbazole)
 74677-70-6 83890-47-5 89115-10-6 90884-11-0
 RL: USES (Uses)
 (electrophotog. charge carrier-transporting layer containing)
 IT 117008-86-3P
 RL: PREP (Preparation)
 (preparation of, as electrophotog. charge carrier-generating pigment)
 IT 86-19-1 89548-73-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, electrophotog. charge carrier-generating pigment from)

L154 ANSWER 46 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:539074 CAPLUS

DOCUMENT NUMBER: 109:139074

TITLE: Electrophotographic photoreceptor for
 semiconductor laser containing fluorenebisazo
 derivatives as charge-generating substance

INVENTOR(S): Haino, Kozo; Enomoto, Kazuhiro; Ito, Akira

PATENT ASSIGNEE(S): Mitsubishi Paper Mills, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62286058	A2	19871211	JP 1986-129414	19860604
PRIORITY APPLN. INFO.:			JP 1986-129414	19860604
GI				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title photoreceptor has an elec. conductive support leaving a layer containing bisazo dyes (I) [R1-3 = H, alkyl, alkoxy, aryl; 2 of R1-3 may be bonded to form a condensed ring; R5-6 = H, halo, alkyl, alkoxy; X = O, S, NR4 (R4 = H, alkyl, aralkyl); Y = coupler residue of azo dye] or II [R1-2 = H, alkyl, alkoxy; R1 and R2 may be bonded to form a condensed ring; R3-4 = H, halo, alkyl, alkoxy; Y = coupler residue of azo dye; n = 0, 1]. The photoreceptor for **semiconductor** laser shows durability and stable characteristics on repeated use. Thus, Al-laminated polyester film was successively coated with a composition (A) Containing I (R1-6 = H; X = O,

Y = Q, n = 0) and Vylon 200 and a composition (B) containing p-Et₂NC₆H₄C:NNPh₂ and polycarbonate to form a electrophotog. photoreceptor which showed high sensitivity.

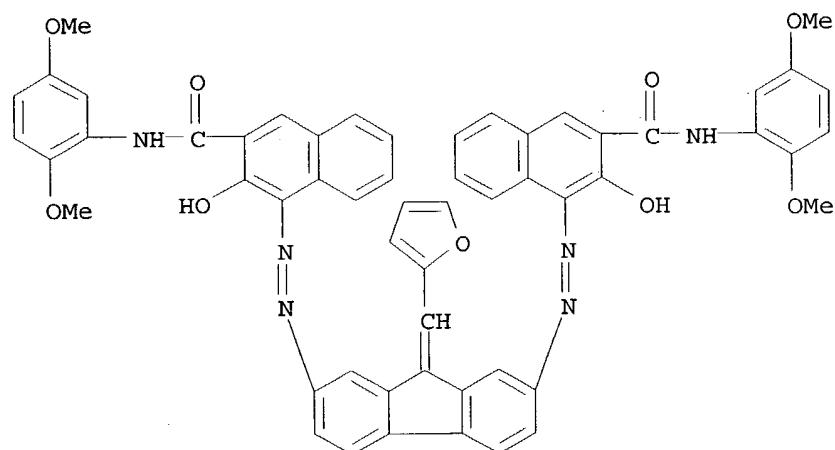
IT 112801-52-2 112801-56-6 112801-61-3

RL: USES (Uses)

(charge-generating substance, for electrophotog. photoreceptor for **semiconductor** laser)

RN 112801-52-2 CAPPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9-(2-furanylmethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N-(2,5-dimethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)

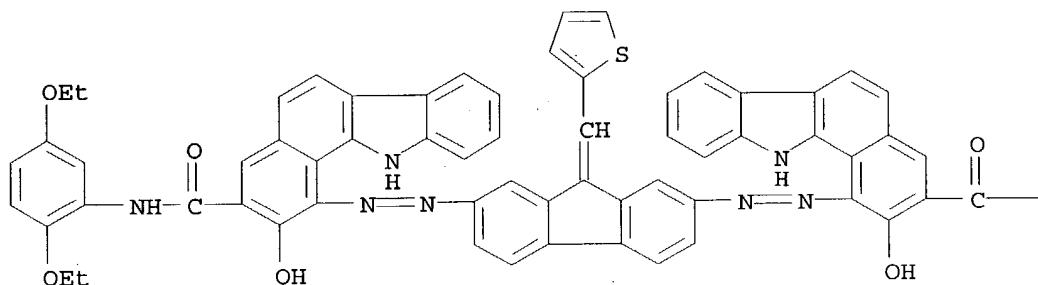


RN 112801-56-6 CAPPLUS

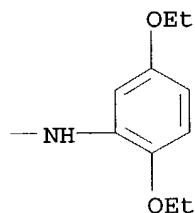
CN 11H-Benz[a]carbazole-3-carboxamide, 1,1'-[[9-(2-thienylmethylene)-9H-

fluorene-2,7-diyl]bis(azo)]bis[N-(2,5-diethoxyphenyl)-2-hydroxy- (9CI)
(CA INDEX NAME)

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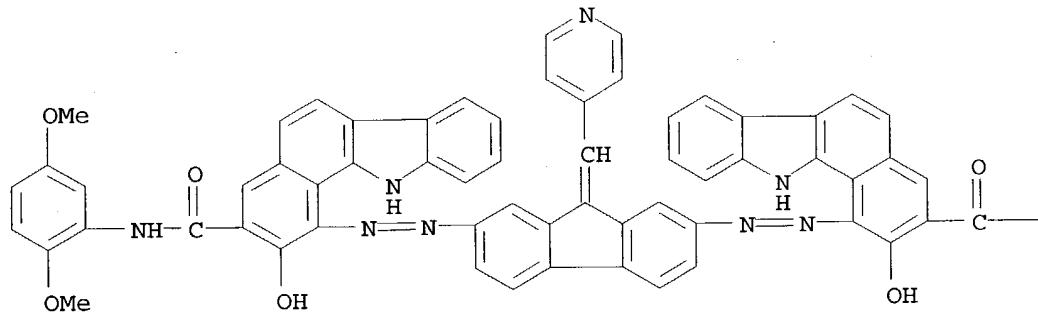
PAGE 1-B

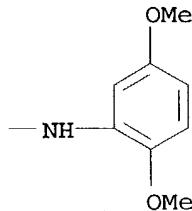


RN 112801-61-3 CAPLUS

CN 11H-Benz[a]carbazole-3-carboxamide, 1,1'-[9-(4-pyridinylmethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N-(2,5-dimethoxyphenyl)-2-hydroxy- (9CI)
(CA INDEX NAME)

PAGE 1-A





IC ICM G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST electrophotog photoreceptor charge generator bisazofluorene; photoconductor electrophotog fluorene bisazo deriv
 IT Dyes, azo
 (bis, fluorene derivs., charge-generating substance, for electrophotog. photoreceptor for **semiconductor** laser)
 IT Electrophotographic photoconductors
 (fluorene bisazo derivs. as charge-generating substance for, for **semiconductor** laser)
 IT 112801-47-5 112801-48-6 112801-50-0 112801-51-1 **112801-52-2**
 112801-53-3 112801-54-4 112801-55-5 **112801-56-6**
 112801-57-7 112801-58-8 112801-59-9 112801-60-2 **112801-61-3**
 112801-62-4 112801-63-5 112801-64-6 112801-65-7 112801-67-9
 112821-67-7 112821-68-8
 RL: USES (Uses)
 (charge-generating substance, for electrophotog. photoreceptor for **semiconductor** laser)
 IT 57609-72-0 68189-23-1, p-Diethylaminobenzaldehyde diphenylhydrazone
 85171-94-4
 RL: USES (Uses)
 (charge-transporting substance, for electrophotog. photoreceptor for **semiconductor** laser)

L154 ANSWER 47 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:483328 CAPLUS
 DOCUMENT NUMBER: 109:83328
 TITLE: Bisazo dye-containing electrophotographic photoreceptor
 INVENTOR(S): Sasaki, Masaomi; Shimada, Tomoyuki
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 8
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 62273545	A2	19871127	JP 1986-118269	19860521
JP 08020740	B4	19960304		
US 4830943	A	19890516	US 1987-49298	19870513
US 5081233	A	19920114	US 1988-261269	19881024
PRIORITY APPLN. INFO.:				
			JP 1986-111287	19860515
			JP 1986-111288	19860515
			JP 1986-115762	19860520
			JP 1986-118269	19860521
			JP 1986-119269	19860526
			JP 1986-119271	19860526
			JP 1986-119272	19860526
			US 1987-49298	19870513

AB An electrophotog. photoreceptor is comprised of a layer containing a bisazo dye having the formula p-(ArN:N)C6H4(CH:CH)4C6H4(N:NAr)-p [Ar = coupler moiety]. The bisazo dye is used as a charge-generating substance. The easily-fabricated photoreceptor is useful for laser printers. Also, the photoreceptor shows a flat sensitivity curve in the range of visible light and **semiconductor** laser emission.

IT 115626-25-0

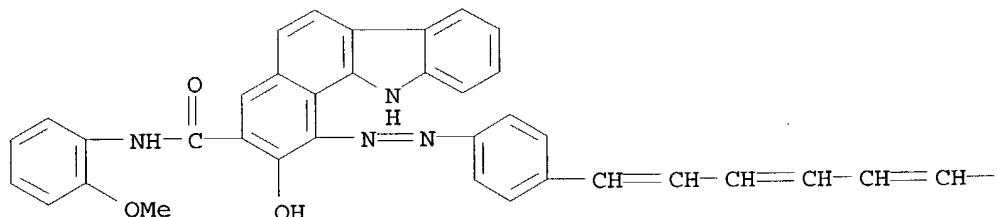
RL: USES (Uses)

(charge-generating substance, electrophotog. photoreceptor containing)

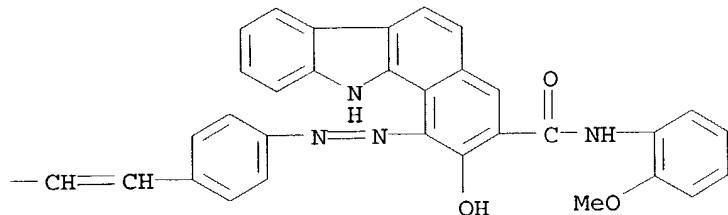
RN 115626-25-0 CAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1'-(1,3,5,7-octatetraene-1,8-diyl)bis(4,1-phenyleneazo)bis[2-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)

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PAGE 1-B



IC ICM G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog photoreceptor bisazo dye; bisazo electrophotog charge generating substance

IT Electrophotographic photoconductors
 (containing bisazo charge-generating substances for laser printers)

IT 115573-93-8 115626-14-7 115626-15-8 115626-16-9 115626-17-0
 115626-21-6 115626-22-7 115626-23-8 115626-24-9 115626-25-0
 115626-26-1 115626-27-2 115626-28-3 115626-29-4 115626-30-7
 115626-31-8 115626-32-9 115626-33-0 115626-34-1 115626-35-2
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 115626-41-0 115650-71-0 115654-84-7 115654-85-8

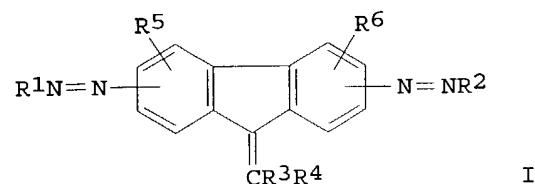
RL: USES (Uses)
 (charge-generating substance, electrophotog. photoreceptor containing)

L154 ANSWER 48 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:205143 CAPLUS
 DOCUMENT NUMBER: 106:205143
 TITLE: Electrophotographic photoreceptors
 INVENTOR(S): Watanabe, Kazumasa; Hirose, Hisahiro; Kinoshita, Akira; Yamazaki, Hiroshi
 PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61226755	A2	19861008	JP 1985-67337	19850329
JP 04015467	B4	19920318		
PRIORITY APPLN. INFO.:			JP 1985-67337	19850329

GI



AB Electrophotog. photoreceptors contain bisazo compds. of the formula I (R1, R2 = coupler moiety selected from naphthol, hydroxyanthracene, hydroxydibenzofuran, hydroxycarbazole, hydroxybenzoindole, hydroxybenzocarbazole, hydroxypyrazole, and hydroxynaphthalene-1,8-dicarboxylic imide moiety; R3 = H, halo, CN, alkyl, aryl, acyl; R4 = (un)substituted pyridyl, thiophenyl, furanyl, pyrrolyl; R5, R6 = H, C1-8 alkyl, C1-6 alkoxy, CN, halo, (un)substituted styryl). The bisazo compds. are especially useful as electrophotog. charge carrier-generating pigments, and the photoreceptors exhibit good sensitivity (especially thermal semiconductor lasers), low residual charge and good durability, and hence they are useful in laser printers.

IT 108185-41-7 108185-50-8

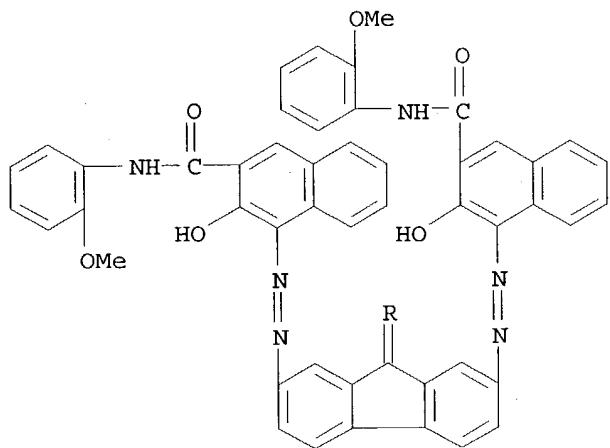
RL: TEM (Technical or engineered material use); USES (Uses)

(electrophotog. charge carrier-generating pigment)

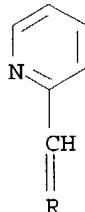
RN 108185-41-7 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9-(2-pyridinylmethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[3-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)

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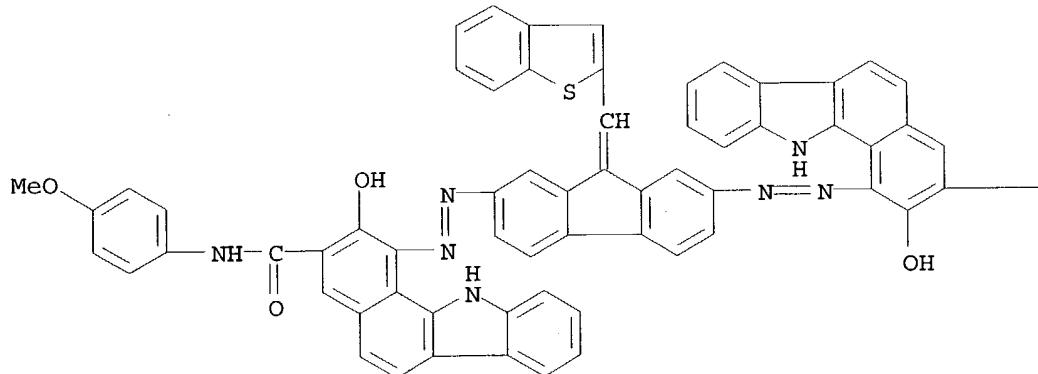
PAGE 2-A



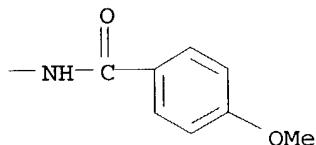
RN 108185-50-8 CAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1'-[[9-(benzo[b]thien-2-ylmethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[2-hydroxy-N-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

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IC ICM G03G005-06

ICA G03G005-04

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog charge generating bisazo pigment; bisazofluorene pigment electrophotog charge generating; fluorene deriv electrophotog charge generating; photoconductor electrophotog composite

IT Dyes, azo
(bisazo, fluorene derivs. as, for electrophotog. uses)

IT Electrophotographic photoconductors
(composite, fluorene derivative type bisazo pigments for)

IT 92-77-3, Naphthol AS

RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with diazotized diaminopyridylmethylenefluorene)

IT 5840-22-2, Naphthol ASSR

RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling reaction of, with diazotized diaminothiophenylmethylenefluorene)

IT 108185-41-7 108185-42-8 108185-43-9 108185-44-0

108185-45-1 108185-46-2 108185-47-3 108185-48-4 108185-49-5

108185-50-8 108185-51-9 108185-52-0

RL: TEM (Technical or engineered material use); USES (Uses)

(electrophotog. charge carrier-generating pigment)
IT 4316-51-2 84746-59-8 87866-77-1 89114-76-1 89114-77-2 90510-68-2
93216-18-3 95458-93-8 96886-80-5 100463-43-2 100463-44-3
100463-45-4
RL: USES (Uses)
(electrophotog. charge carrier-transporting agent)
IT 108185-55-3P 108185-56-4P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and diazotiazation-coupling reaction of)
IT 108185-53-1P 108185-54-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and reduction of)
IT 108185-39-3P 108185-40-6P
RL: PREP (Preparation)
(preparation of, as electrophotog. charge carrier-generating pigment)
IT 98-03-3 1121-60-4, Pyridine-2-aldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrofluorene)
IT 5405-53-8, 2,7-Dinitrofluorene
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with heterocycloaldehyde)

L154 ANSWER 49 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:76104 CAPLUS
DOCUMENT NUMBER: 106:76104
TITLE: Sensitive materials in electrophotography
INVENTOR(S): Ota, Masafumi
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61132953	A2	19860620	JP 1984-254727	19841201
JP 06001385	B4	19940105		
PRIORITY APPLN. INFO.:			JP 1984-254727	19841201
GI				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Laminated electrophotog. sensitive materials with high sensitivity contain charge-generating layers containing the trisazo dyes I (R = 2-ethylphenyl, 4-methylphenyl, 2-methylphenyl, 4-methoxyphenyl, 4-ethylphenyl, 5-chloro-2-methylphenyl, 2-ethoxyphenyl, 2,5-dimethylphenyl, 2,4-dimethylphenyl) and charge-transport layers containing the triphenylamines II (R₁-R₃ = H, lower alkyl, lower alkoxy, Ph, phenoxy, Cl). Thus, a photosensitive material prepared by using a charge-generating layer containing

(R = 2-ethylphenyl) and a charge-transport layer containing II (R1 = 4-Me; R2 = 4'-Me; R3 = 4''-Me) was used in electrostatic copying to show high sensitivity in the visible light region, excellent sensitivity in semiconductor-laser wavelength region (800 nm), and clear images on 10,000 sheets.

IT 84809-03-0

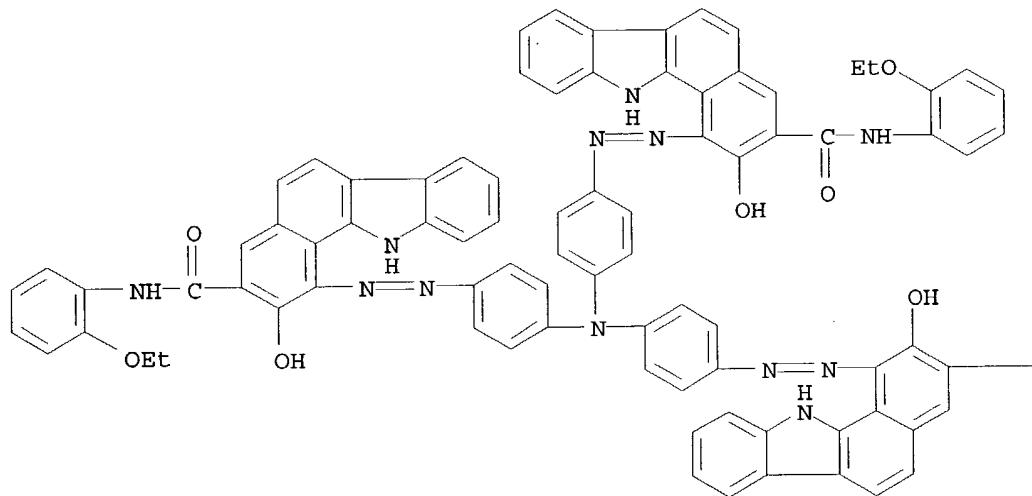
RL: USES (Uses)

(electrophotog. photoconductor with charge-generating material from)

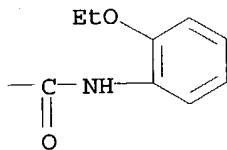
RN 84809-03-0 CAPLUS

CN 11H-Benz[a]carbazole-3-carboxamide, 1,1',1'''-[nitrilotris(4,1-phenyleneazo)]tris[N-(2-ethoxyphenyl)-2-hydroxy- (9CI) (CA INDEX NAME)

PAGE 1-A



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IC ICM G03G005-04

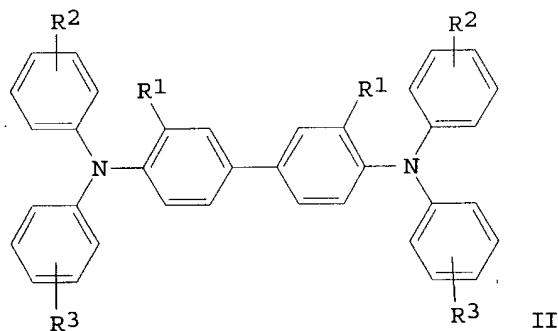
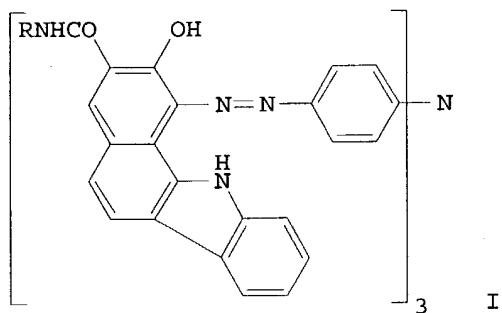
ICS H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST electrophotog sensitive material high sensitivity; azo dye electrophotog sensitive material; phenylamine electrophotog sensitive material
IT Dyes, azo
(tris-, electrophotog. photoconductor with charge-generating material from)
IT Electrophotographic photoconductors
(with charge-generating material from trisazo dye and charge-transport material from triphenylamine derivative)
IT 79900-47-3 84809-00-7 84809-01-8 84809-02-9 84809-03-0
84809-04-1 84809-13-2 84814-51-7 84814-52-8 84814-53-9
RL: USES (Uses)
(electrophotog. photoconductor with charge-generating material from)
IT 1159-53-1 4316-51-2 4316-53-4 20440-94-2 20440-95-3 20676-79-3
36809-23-1 106614-58-8 106614-59-9 106614-60-2 106614-61-3
106614-62-4 106614-63-5 106614-64-6 106614-65-7
RL: USES (Uses)
(electrophotog. photoconductor with charge-transport material from)

L154 ANSWER 50 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:635789 CAPLUS
DOCUMENT NUMBER: 105:235789
TITLE: Electrophotographic phtoreceptors
INVENTOR(S): Ota, Masafumi
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61124949	A2	19860612	JP 1984-246918	19841121
JP 05043108	B4	19930630		

PRIORITY APPLN. INFO.: JP 1984-246918 19841121
GI



AB The claimed composite electrophotog. photoreceptors contain I ($R =$ 2-ethylphenyl, 4-methylphenyl, 2-methylphenyl, Ph, 4-methoxyphenyl, 4-ethylphenyl, 2-ethoxyphenyl, 2-methyl-5-chlorophenyl, 2,5-dimethylphenyl, 2,4-dimethylphenyl) in the charge carrier-generating layer, and also contain II ($R1 = H, Cl, Me, MeO; R2, R3 = H, Cl, lower alkyl, lower alkoxy$) in the charge carrier-transporting layer. The photoreceptors show high sensitivity toward visible light and semiconductor lasers, and also exhibit good durability.

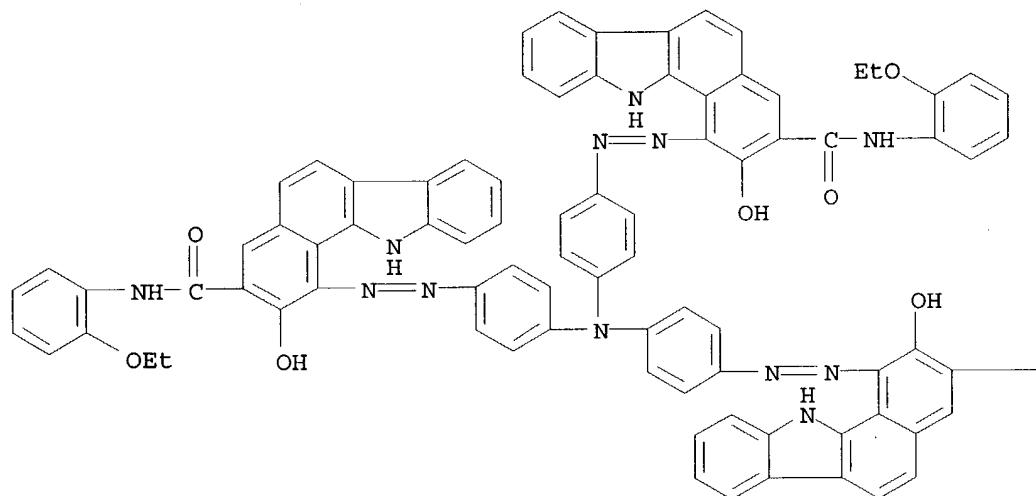
TT 84809-03-0

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge carrier-generating pigment)

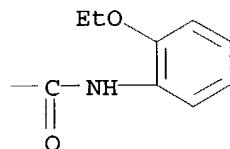
RN 84809-03-0 CAPLUS

11H-Benzo[a]carbazole-3-carboxamide, 1,1',1''-[nitrilotris(4,1-phenyleneazo)]tris[N-(2-ethoxyphenyl)-2-hydroxy- (9CI) (CA INDEX NAME)

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IC ICM G03G005-04
ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog composite photoconductor; trisazo pigment electrophotog charge generating; benzidine electrophotog charge transporting agent

IT Photography, electro-, photoconductors
(composite, charge carrier-generating trisazo pigments and charge carrier-transporting benzidine derivs. for)

IT 79900-47-3 84809-00-7 84809-01-8 84809-02-9 84809-03-0
84809-04-1 84809-13-2 84814-51-7 84814-52-8 84814-53-9

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge carrier-generating pigment)

IT 76185-65-4 105465-12-1 105465-13-2 105465-14-3 105465-15-4
105465-16-5 105465-17-6 105465-18-7 105465-19-8 105465-20-1
105465-21-2 105465-22-3 105465-23-4 105465-24-5 105482-14-2
RL: USES (Uses)
(electrophotog. charge carrier-transporting agent)

L154 ANSWER 51 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1986:99448 CAPLUS
DOCUMENT NUMBER: 104:99448
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102638	A2	19850606	JP 1983-210626	19831109
JP 03037180	B4	19910604		

PRIORITY APPLN. INFO.: JP 1983-210626 19831109

GI For diagram(s), see printed CA Issue.

AB Composite electrophotog. photosensitive materials contain a bisazo compound I (R = II, III, IV, V; A = aromatic carbocycle or heterocycle; R1 = H, OH, CO2R5, SO3H, carbamoyl, sulfamoyl; R2 = H, alkyl, amino, carbamoyl, CN, CO2R5; R3 = aryl; R4 = alkyl, aralkyl, aryl; R5 = organic moiety) in the charge-carrier-generating layer and a hydrazone derivative VI (R6 = naphthyl; R7 = alkyl, aralkyl, aryl; R8 = H, alkyl, alkoxy; R9, R10 = alkyl, aralkyl, aryl) in the charge-carrier-transfer layer. The electrophotog. photosensitive materials show high sensitivity (especially toward **semiconductor** lasers), thermal stability and durability. Thus, an Al-laminated polyester film support was coated with a composition containing I

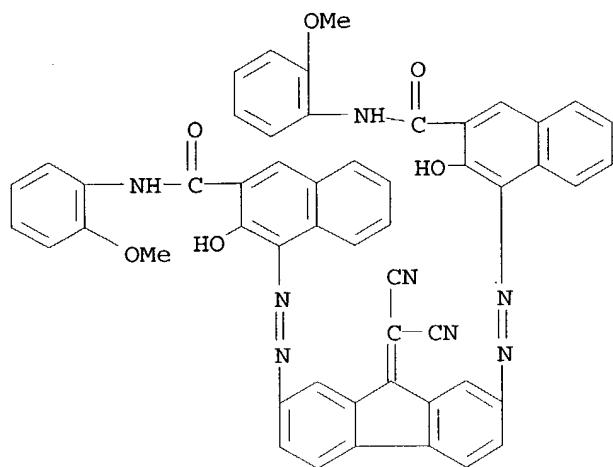
(R = VII) and poly(vinyl butyral) and coated with a composition containing VI (R6 = 2-naphthyl; R7 = Ph; R8 = H; R9 = R10 = Pr) and a polycarbonate resin to give an electrophotog. plate having excellent sensitivity toward GaAs laser beam and good durability.

IT 93754-45-1 97816-78-9 97931-70-9

RL: USES (Uses)
(electrophotog. charge-carrier-generating pigment)

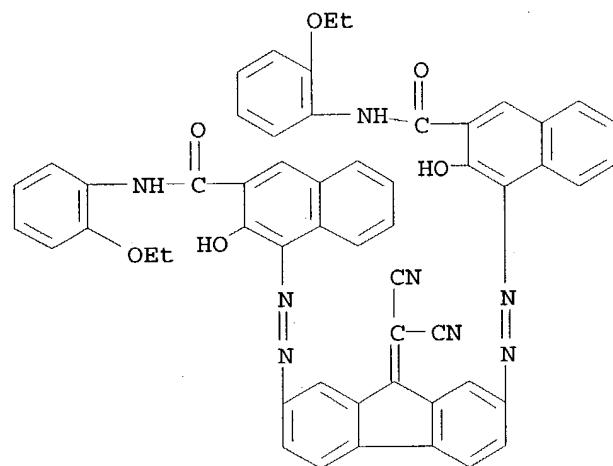
RN 93754-45-1 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[{9-(dicyanomethylene)-9H-fluorene-2,7-diyl}bis(azo)]bis[3-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)



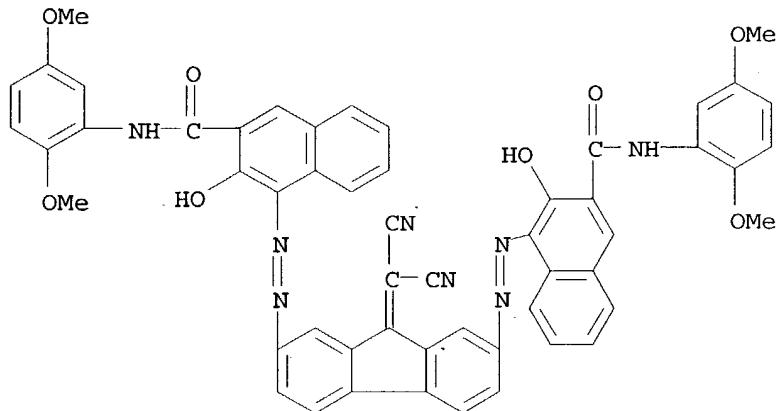
RN 97816-78-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis[azobis[N-(2-ethoxyphenyl)-3-hydroxyphenyl]] (9CI) (CA INDEX NAME)



RN 97931-70-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis[azobis[N-(2,5-dimethoxyphenyl)-3-hydroxyphenyl]] (9CI) (CA INDEX NAME)



IC ICM G03G005-04
ICS H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST electrophotog charge generating bisazo pigment; hydrazone electrophotog charge transfer agent
IT Dyes
 (bisazo, electrophotog. charge-carrier-generating)
IT Photography, electro-, photoconductors
 (composite, charge-carrier-generating bisazo pigments and hydrazone derivative type charge-carrier-transfer agents for)
IT 88701-08-0 93754-45-1 93754-52-0 97008-60-1
97816-78-9 97931-70-9
RL: USES (Uses)
 (electrophotog. charge-carrier-generating pigment)
IT 83890-46-4 83890-48-6 83890-51-1 83890-53-3 83890-57-7
83890-58-8 84159-26-2
RL: USES (Uses)
 (electrophotog. charge-carrier-transfer agent)
IT 88066-48-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and diazotization of)
IT 15538-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reduction of)
IT 88701-07-9P
RL: PREP (Preparation)
 (preparation of, as electrophotog. charge-carrier-generating pigment)
IT 109-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dinitrofluorenone)
IT 92-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with hexafluorophosphate of diaminodicyanomethylidenefluorene dihydrochloride)
IT 31551-45-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with malononitrile)

L154 ANSWER 52 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:586875 CAPLUS
DOCUMENT NUMBER: 103:186875
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102640	A2	19850606	JP 1983-210628	19831109
PRIORITY APPLN. INFO.:			JP 1983-210628	19831109

GI For diagram(s), see printed CA Issue.

AB Electrophotog. photosensitive layers contain particles (average particle size $\leq 2\mu$) of a bisazo dye I (R = II, III, IV, V; A = aromatic carbocycle, heterocycle; R1 = H, OH, CO2R5, SO3H, carbamoyl, sulfamoyl; R2 = H, alkyl, amino, carbamoyl, O2R5, CN; R3 = aryl; R4 = alkyl, aralkyl, aryl; R5 = organic moiety). Thus, an Al-laminated polyester film support was coated with a composition containing poly(vinyl butylral) and I (R = VI) particles

(average particle size 1.0 μ) and coated with a composition containing 3-(p-methoxystyryl)-9-(p-methoxyphenyl)carbazole and a polycarbonate resin to give an electrophotog. plate which showed high sensitivity to semiconductor lasers and had good durability.

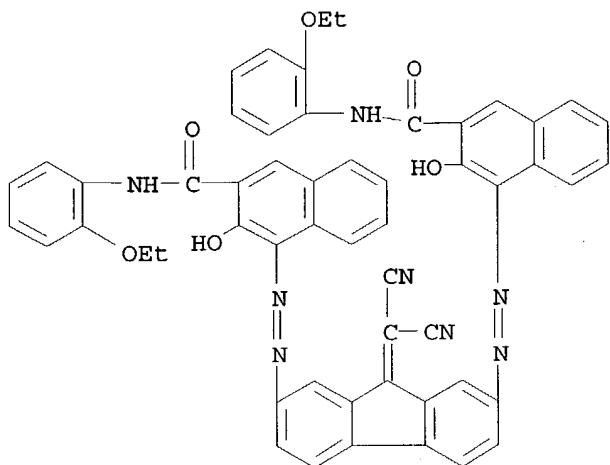
IT 97816-78-9

RL: USES (Uses)

(electrophotog. charge-carrier-generating pigment, sensitivity in relation to particle size of)

RN 97816-78-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N-(2-ethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



IC ICM G03G005-06
ICS C09B035-039; H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST electrophotog charge generating bisazo pigment
IT Photography, electro-, photoconductors
(composite, charge carrier-generating bisazo pigments for, semiconductor laser sensitivity in relation to particle size of)
IT 88701-08-0 93754-52-0 97816-78-9 98058-53-8
RL: USES (Uses)
(electrophotog. charge-carrier-generating pigment, sensitivity in relation to particle size of)
IT 1159-53-1 68189-23-1 84746-59-8
RL: USES (Uses)
(electrophotog. charge-carrier-transfer agent)
IT 88066-48-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and diazotization of)
IT 15538-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)
IT 88701-07-9P
RL: PREP (Preparation)
(preparation of, as electrophotog. charge-carrier-generating pigment)
IT 109-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrofluorenone)
IT 92-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hexafluorophosphate of diazotized diaminodicyanomethylidenefluorene dihydrochloride)
IT 31551-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with malononitrile)

L154 ANSWER 53 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:569860 CAPLUS
DOCUMENT NUMBER: 103:169860
TITLE: Electrophotographic plates
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60123848	A2	19850702	JP 1983-232438	19831209
PRIORITY APPLN. INFO.:			JP 1983-232438	19831209

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB An electrophotog. plate with improved durability and sensitivity to **semiconductor** laser is obtained by forming on an elec. conductive support a charge carrier-generating layer containing a trisazo pigment of the formula I (R = 2-ethylphenyl, 4-methylphenyl, 2-methylphenyl, ph, 4-methoxyphenyl, 4-ethylphenyl, 2-methyl-5-chlorophenyl, 2-ethoxyphenyl, 2,5-dimethylphenyl, 2,4-dimethylphenyl) and a charge carrier-transporting layer containing a carbazole compound of the formula II (R1 = low alkyl, aryl, benzyl; R2 = H, low alkyl, low alkoxy, halo, NO2, NH2, low alkyl- or benzyl-substituted amino; n = 1, 2).

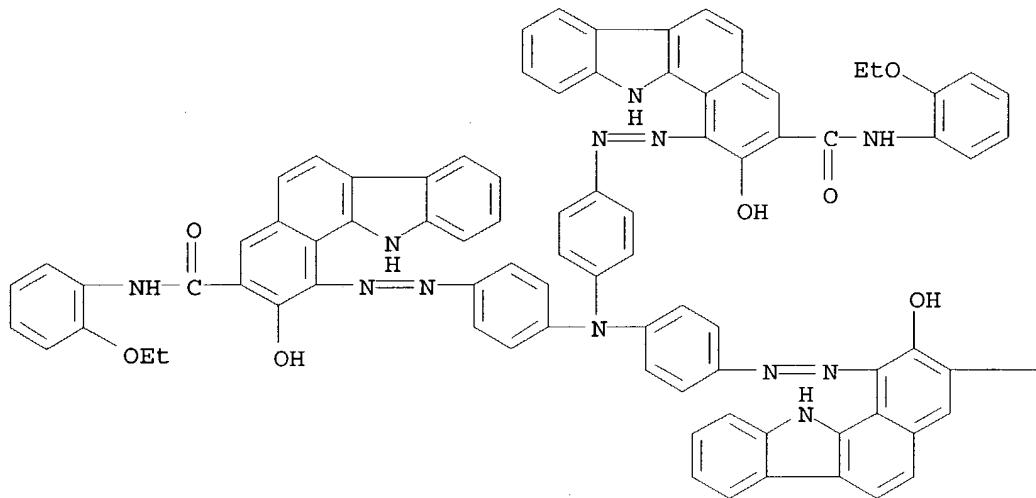
IT 84809-03-0

RL: USES (Uses)
(electrophotog. composite photoconductors with charge carrier-generating layer containing)

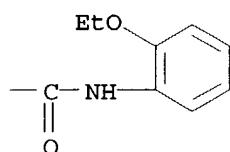
RN 84809-03-0 CAPLUS

CN 11H-Benz[a]carbazole-3-carboxamide, 1,1',1'''- [nitrilotris(4,1-phenyleneazo)]tris[N-(2-ethoxyphenyl)-2-hydroxy- (9CI) (CA INDEX NAME)

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IC ICM G03G005-04
ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog composite photoconductor trisazo carbazole

IT Polyesters, uses and miscellaneous

RL: USES (Uses)

(binders, electrophotog. composite photoconductors with charge carrier-generating layer containing)

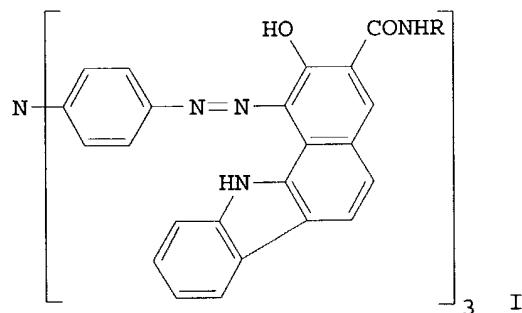
IT Photography, electro-, photoconductors

(composite, with charge carrier-generating layer containing trisazo pigments and charge carrier-transporting layer containing carbazole compds.)

IT Siloxanes and Silicones, uses and miscellaneous
RL: USES (Uses)
(oil, electrophotog. composite photoconductors with charge
carrier-transporting layer containing)
IT Photography, electro-, plates
(with charge carrier-generating layer containing trisazo pigments and
charge carrier-transporting layer containing carbazole compds.)
IT Vinyl acetal polymers
RL: USES (Uses)
(butyral, binders, electrophotog. composite photoconductors with
charge carrier-generating layer containing)
IT 24936-68-3, uses and miscellaneous
RL: USES (Uses)
(binders, electrophotog. composite photoconductors with charge
carrier-transporting layer containing)
IT 79900-47-3 84809-00-7 84809-01-8 84809-02-9 84809-03-0
84809-04-1 84809-13-2 84814-51-7 84814-52-8 84814-53-9
RL: USES (Uses)
(electrophotog. composite photoconductors with charge
carrier-generating layer containing)
IT 86230-10-6 86230-11-7 86230-12-8 86230-14-0 95165-73-4
98517-07-8 98517-08-9 98517-09-0 98517-10-3 98517-11-4
98517-12-5 98517-13-6 98517-14-7 98517-15-8 98517-16-9
98517-17-0 98517-18-1 98517-19-2 98517-20-5
RL: USES (Uses)
(electrophotog. composite photoconductors with charge
carrier-transporting layer containing)

L154 ANSWER 54 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:550929 CAPLUS
DOCUMENT NUMBER: 103:150929
TITLE: Composite electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60104952	A2	19850610	JP 1983-213837	19831114
JP 05046939	B4	19930715		
PRIORITY APPLN. INFO.:			JP 1983-213837	19831114
GI				



AB Composite electrophotog. photosensitive materials contain trisazo compound I (R = 2-EtC₆H₄, 4-MeC₆H₄, 2-MeC₆H₄, Ph, 4-MeOC₆H₄, 4-EtC₆H₄, 2-Me-5-C₁C₆H₄, 2-EtOC₆H₅, 2,5-dimethylphenyl, 2,4-dimethylphenyl) in the charge-carrier-generating layer and a styryl compound R₁CH:CR₂(CH:CH)nZNR₃R₄ (II:R₁ = aryl; R₂, R₃, R₄ = H, alkyl, aryl; Z = arylene; N = 0, 1) in the charge-carrier-transfer layer. The electrophotog. materials exhibit good sensitivity to entire visible light and **semiconductor** lasers, and also have good durability. Thus, an Al-laminated polyester film support was coated with a composition containing I (R = 2-EtC₆H₄) and poly(vinyl carbazole), and coated with a composition containing II (R₁, R₃, R₄ = Ph; R₂ = H; Z = p-C₆H₄; n = 0) and a polycarbonate resin to give an electrophotog. plate having excellent sensitivity.

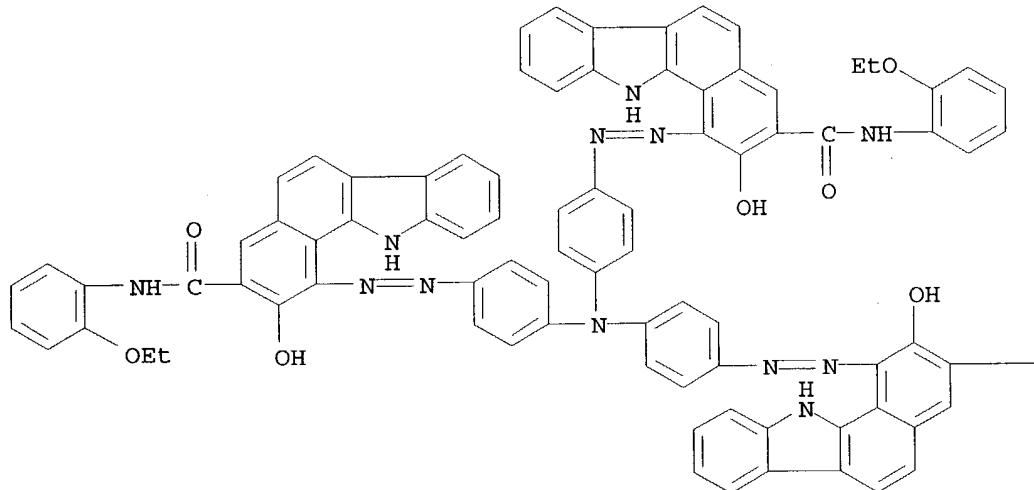
IT 84809-03-0

RL: USES (Uses)
(electrophotog. charge-carrier-generating pigment)

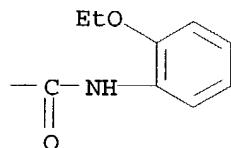
RN 84809-03-0 CAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1',1'''-[nitrilotris(4,1-phenyleneazo)]tris[N-(2-ethoxyphenyl)-2-hydroxy- (9CI) (CA INDEX NAME)

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PAGE 1-B

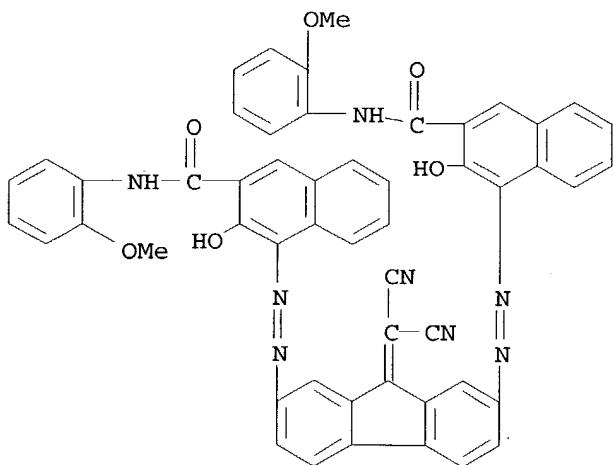


IC ICM G03G005-04
ICs H01L031-08
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST electrophotog charge generating trisazo pigment; styryl compd charge transfer agent
IT Photography, electro-, photoconductors
(composite, charge-carrier-generating trisazo pigments and charge-carrier-transfer agents for)
IT Dyes, azo
(tris-, electrophotog. charge-carrier-generating)
IT 79900-47-3 84809-00-7 84809-01-8 84809-02-9 **84809-03-0**
84809-04-1 84809-13-2 84814-51-7 84814-52-8 84814-53-9
RL: USES (Uses)
(electrophotog. charge-carrier-generating pigment)
IT 61600-38-2 89114-71-6 89114-74-9 92003-09-3 93216-13-8
93216-20-7 93216-31-0 95304-31-7 98094-47-4 98094-48-5
98094-49-6 98094-50-9 98094-51-0 98094-52-1 98094-53-2
98094-54-3 98094-55-4 98094-56-5 98094-57-6 98094-58-7
98113-93-0
RL: USES (Uses)
(electrophotog. charge-carrier-transfer agent)

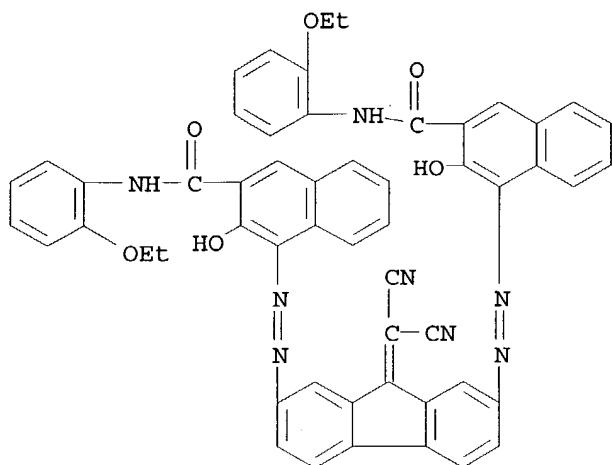
L154 ANSWER 55 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:513333 CAPLUS
DOCUMENT NUMBER: 103:113333
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102639	A2	19850606	JP 1983-210627	19831109
JP 03037178	B4	19910604		
PRIORITY APPLN. INFO.:			JP 1983-210627	19831109
GI	For diagram(s), see printed CA Issue.			
AB	Composite electrophotog. photosensitive materials contain a bisazo pigment I (R = II, III, IV, V; A = carbocyclic or heterocyclic aromatic ring; R1 = H, OH, CO2R5, SO3H, carbamoyl, sulfamoyl; R2 = H, alkyl, amino, carbamoyl, CO2R5, CN; R3 = aryl; R4 = alkyl, aralkyl, aryl; R5 = organic moiety) in the charge-carrier-generating layer and a hydrazone compound VI (R6 = Me, Et, HOCH2CH2, ClCH2CH2; R7 = Me, Et, Ph, PhCH2) in the charge-carrier-transfer layer. The photosensitive materials show good sensitivity (especially toward semiconductor lasers), good thermal stability and good durability. Thus, an Al-laminated polyester film support was coated with a composition containing I (R = VII) and poly(vinyl butyral) and coated with a composition containing			
	VI (R6 = R7 = Et) and a polycarbonate resin to give a composite electrophotog. plate which showed excellent sensitivity toward GaAs laser beam and good durability.			
IT	93754-45-1 97816-78-9 97931-70-9			
RL:	USES (Uses) (electrophotog. charge-carrier-generating pigment)			
RN	93754-45-1 CAPLUS			
CN	2-Naphthalenecarboxamide, 4,4' - [[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)			

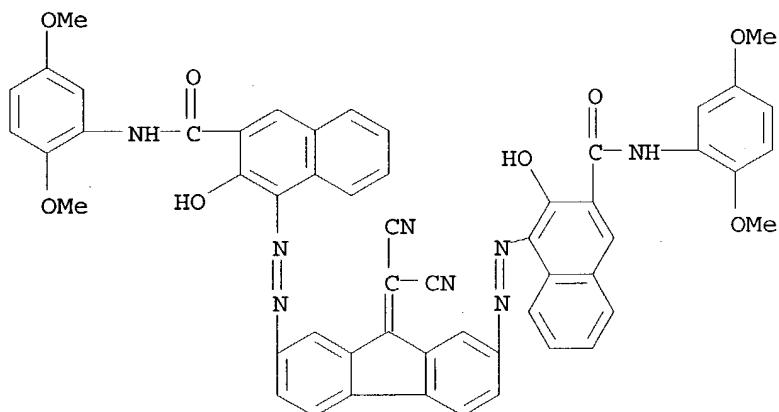


RN 97816-78-9 CAPLUS
 CN 2-Naphthalenecarboxamide, 4,4' - [[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N-(2-ethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



RN 97931-70-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N- (2,5-dimethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



IC ICM G03G005-04

ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog charge generating bisazo pigment; hydrazone electrophotog charge transfer agent

IT Dyes

(bisazo, electrophotog. charge-carrier-generating)

IT Photography, electro-, photoconductors

(composite, charge-carrier-generating bisazo pigments and hydrazone derivative type charge-carrier-transfer agents for)

IT 88701-08-0 93754-45-1 93754-52-0 97008-60-1

97816-78-9 97931-70-9

RL: USES (Uses)

(electrophotog. charge-carrier-generating pigment)

IT 75232-44-9 75238-79-8 75293-65-1 75293-67-3 84678-52-4
92827-95-7 95905-90-1 98058-54-9
RL: USES (Uses)
(electrophotog. charge-carrier-transfer agent)
IT 88066-48-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and diazotization of)
IT 15538-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and reduction of)
IT 88701-07-9P
RL: PREP (Preparation)
(preparation of, as electrophotog. charge-carrier-generating pigment)
IT 109-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrofluorenone)
IT 92-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hexafluorophosphate of diazotized
diaminodicyanomethylidenefluorene dihydrochloride)
IT 31551-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with malononitrile)

L154 ANSWER 56 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:513332 CAPLUS
DOCUMENT NUMBER: 103:113332
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102637	A2	19850606	JP 1983-210625	19831109
JP 03037177	B4	19910604		

PRIORITY APPLN. INFO.: JP 1983-210625 19831109

GI For diagram(s), see printed CA Issue.

AB Composite electrophotog. photosensitive materials contain a bisazo pigment I (R = II, III, IV, V; A = aromatic carbocyclic or heterocyclic ring; R1 = H, OH, CO2R5, SO3H, carbamoyl, sulfamoyl; R2 = H, alkyl, amino, CO2R5, carbamoyl, CN; R3 = aryl; R4 = alkyl, aralkyl, aryl; R5 = organic moiety) in the charge carrier-generating layer and a pyrazoline derivative VI (R6, R7, R8 = aryl; R9, R10 = H, C1-4 alkyl, aryl, aralkyl; R9 and R10 can not be H simultaneously; n = 0, 1; when n = 0, R9 ≠ H) in the charge carrier-transfer layer. The electrophotog. materials show good sensitivity toward lights in wide wavelength region and also show good thermal stability and durability. Thus, an Al-laminated film support was coated with a subbing layer, then coated with a composition containing I (R =

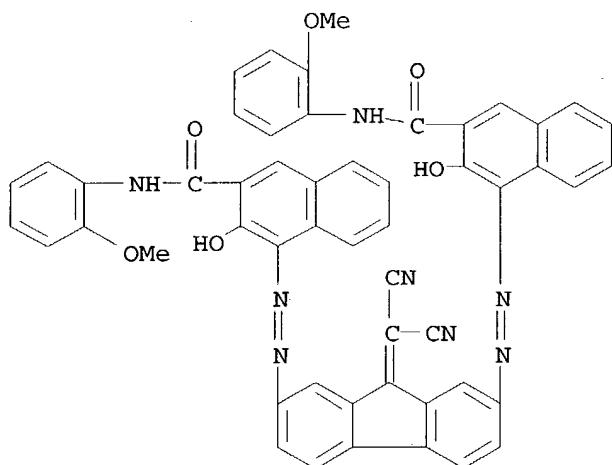
and poly(vinyl butyral), and coated with a composition containing polycarbonate resin and VI (R6 = p-MeOC₆H₄; R7 = Ph; R8 = p-Me₂NC₆H₄; R9 = Me; R10 = H; n = 1) to give an electrophotog. plate which showed good sensitivity to semiconductor laser and good durability.

IT 93754-45-1 97931-70-9

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge carrier-generating pigment)

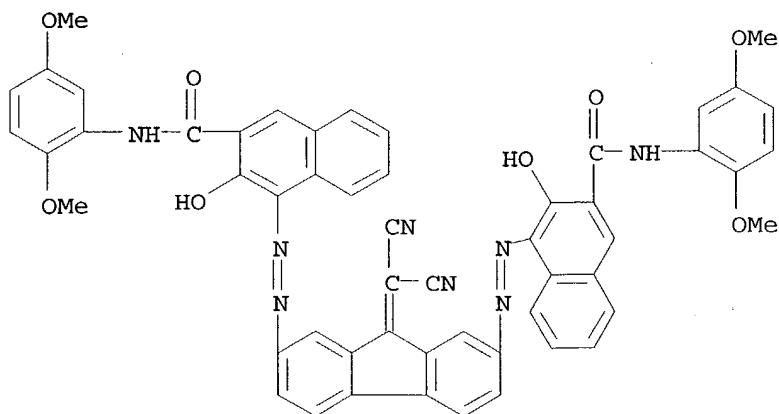
RN 93754-45-1 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[3-hydroxy-N-(2-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 97931-70-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N-(2,5-dimethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)]



IC ICM G03G005-04

ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog charge generating bisazo pigment; pyrazoline electrophotog charge transfer agent
IT Dyes
(bisazo, electrophotog. charge-carrier-generating)
IT Photography, electro-, photoconductors
(composite, charge carrier-generating bisazo pigments and pyrazoline derivative type charge carrier-transfer agents for)
IT 93754-45-1 93754-52-0 97008-60-1 97931-70-9
98058-56-1
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. charge carrier-generating pigment)
IT 74317-73-0 90053-81-9 90053-82-0 96358-29-1 96358-33-7
98058-57-2 98058-58-3 98058-59-4
RL: USES (Uses)
(electrophotog. charge carrier-transfer agent)
IT 88066-48-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and diazotization of)
IT 15538-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)
IT 88701-07-9P
RL: PREP (Preparation)
(preparation of, as electrophotog. charge carrier-generating pigment)
IT 109-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrofluorenone)
IT 92-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hexafluorophosphate of diazotized
diaminodicyanomethylidenefluorene dihydrochloride)
IT 31551-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with malononitrile)

L154 ANSWER 57 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:513331 CAPLUS
DOCUMENT NUMBER: 103:113331
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102636	A2	19850606	JP 1983-210624	19831109
JP 03037179	B4	19910604		
PRIORITY APPLN. INFO.:			JP 1983-210624	19831109
GI For diagram(s), see printed CA Issue.				

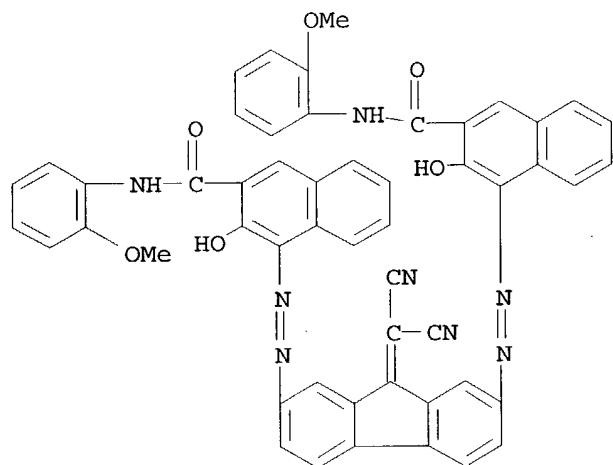
AB Composite electrophotog. photosensitive materials contain a bisazo compound I (R = II, III, IV, V; A = arom or heterocyclic ring; R1 = H, OH, CO2R5, SO3H, carbamoyl, sulfamoyl; R2 = H, alkyl, amino, carbamoyl, CO2R5, CN; R3 = aryl; R4 = alkyl, aralkyl, aryl; R5 = organic moiety) in the charge carrier-generating layer and a hydrazone compound VI (R6, R7 = H, halo; R8, R9 = aryl; Z = arylene) in the charge carrier-transfer layer. The photosensitive materials exhibit good sensitivity to light within a wide wavelength region and good thermal stability and light-induced degradation resistance. Thus, an Al-laminated film support was coated with a subbing layer, then coated with a composition containing I (R = VII) and poly(vinyl butyral), and coated with a composition containing VI (R6 = R7 = H; R8 = R9 = p-MeC6H4; Z = p-C6H4) and Panlite 1250 (a polycarbonate resin) to give an electrophotog plate having excellent sensitivity (especially toward semiconductor lasers) and durability.

IT 93754-45-1 97816-78-9 97931-70-9

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog charge carrier-generating pigment)

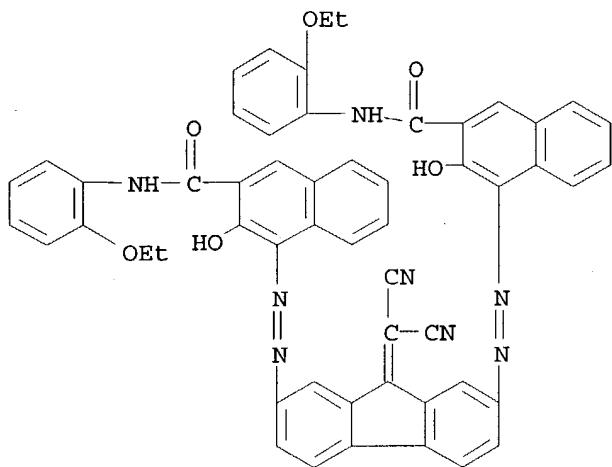
RN 93754-45-1 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9- (dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[3-hydroxy-N- (2-methoxyphenyl)- (9CI) (CA INDEX NAME)



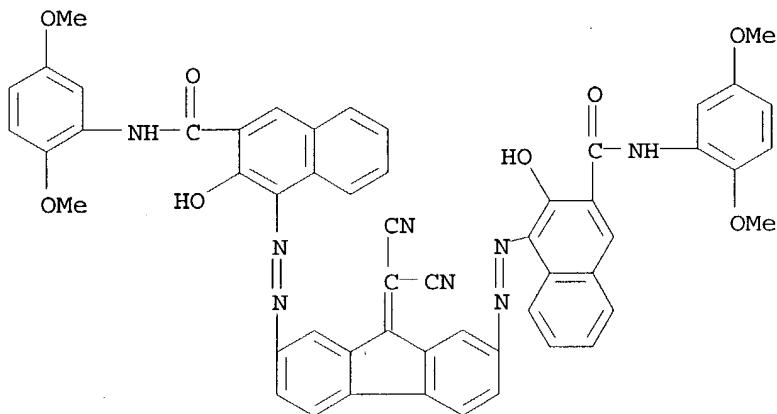
RN 97816-78-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9- (dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N- (2-ethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



RN 97931-70-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9- (dicyanomethylene) -9H-fluorene-2,7-diyl]bis(azo)]bis[N- (2,5-dimethoxyphenyl) -3-hydroxy- (9CI) (CA INDEX NAME)



IC ICM G03G005-04

ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog charge carrier generating pigment; bisazo pigment
electrophotog charge generator; hydrazone electrophotog charge transfer agent

IT Dyes

(bisazo, electrophotog. charge carrier-generating)

IT Photography, electro-, photoconductors

(composite, charge carrier-generating bisazo pigments and hydrazone derivative charge carrier-transfer agents for)

IT 93754-45-1 93754-52-0 97008-60-1 97816-78-9

97931-70-9

RL: TEM (Technical or engineered material use); USES (Uses)

(electrophotog. charge carrier-generating pigment)
IT 84285-20-1 84285-21-2 84285-24-5 92633-74-4 92633-75-5
98058-55-0 98078-01-4
RL: USES (Uses)
(electrophotog. charge carrier-transfer agent)
IT 88066-48-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and diazotization of)
IT 15538-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and reduction of)
IT 88701-07-9P
RL: PREP (Preparation)
(preparation of, as electrophotog. charge carrier-generating pigment)
IT 109-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrofluorenone)
IT 92-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hexafluorophosphate of diazotized
diaminodicyanomethylidenefluorene dihydrochloride)
IT 31551-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with malononitrile)

L154 ANSWER 58 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:513328 CAPLUS
DOCUMENT NUMBER: 103:113328
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102635	A2	19850606	JP 1983-210623	19831109
JP 02009339	B4	19900301		
US 4599287	A	19860708	US 1984-669696	19841107
EP 144791	A2	19850619	EP 1984-113489	19841108
EP 144791	A3	19860205		
EP 144791	B1	19920115		

R: DE, FR, GB

PRIORITY APPLN. INFO.:	JP 1983-210622	19831109
	JP 1983-210623	19831109
	JP 1984-108226	19840528
	JP 1984-108228	19840528

GI For diagram(s), see printed CA Issue.
AB Composite electrophotog. photosensitive materials contain a bisazo compound
I (R = II, III, IV, V; A = arom carbocycle, heterocycle; R1 = H, OH,

CO₂R₅, SO₃H, carbamoyl, sulfamoyl; R₂ = H, alkyl, amino, carbamoyl, CO₂R₅, CN; R₃ = aryl; R₄ = alkyl, aralkyl, aryl; R₅ = organic moiety) in the charge carrier-generating layer and ≥ 1 of hydrazone compound VI and VII (R₆, R₉ = aryl, heterocyclyl; R₇, R₁₀ = H, alkyl, aryl; R₈ = H, halo, alkyl, alkoxy, substituted amino; R₁₁ = H, halo, CN, alkyl, alkoxy, substituted amino; n, m = 0, 1) in the charge carrier-transfer layer. The electrophotog. photosensitive materials have high sensitivity, especially toward

semiconductor lasers, and good durability. Thus, an Al-laminated polyester film support was coated with a subbing layer, then coated with a composition containing I (R = VIII) and poly(vinyl butyral), and coated with a composition containing VI [R₆ = 9-(4-methoxyphenyl)carbazol-3-yl; R₇ = R₈ = H;

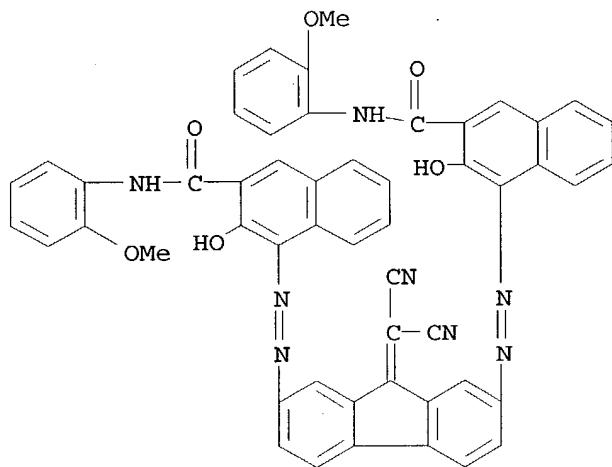
n = 0] and a polycarbonate resin to give a composite electrophotog. plate which showed high sensitivity to a W lamp as well as a semiconductor laser (780 nm).

IT 93754-45-1 97816-78-9 97931-70-9

RL: USES (Uses)
(electrophotog. charge-carrier-generating pigment)

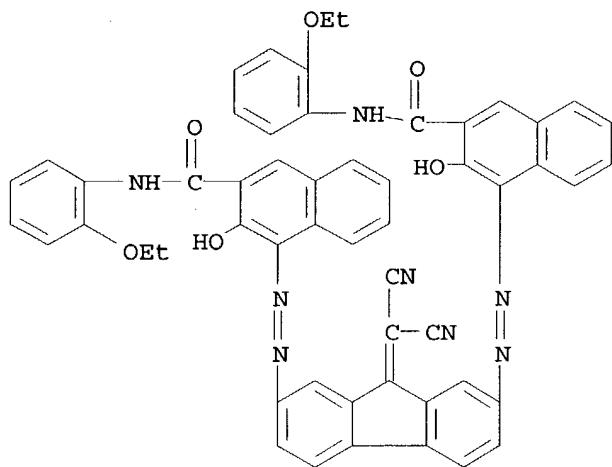
RN 93754-45-1 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4' - [[9- (dicyanomethylene) -9H-fluorene-2,7-diyl]bis(azo)]bis[3-hydroxy-N- (2-methoxyphenyl)- (9CI) (CA INDEX NAME)



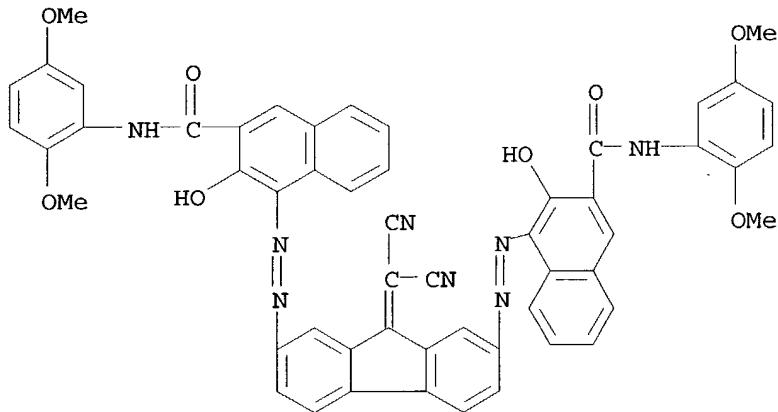
RN 97816-78-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4' - [[9- (dicyanomethylene) -9H-fluorene-2,7-diyl]bis(azo)]bis[N- (2-ethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



RN 97931-70-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9-(dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N- (2,5-dimethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



IC ICM G03G005-04

ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog charge generating bisazo pigment; hydrazone electrophotog charge transfer agent

IT Dyes

(bisazo, electrophotog charge carrier-generating)

IT Photography, electro-, photoconductors

(composite, charge carrier-generating bisazo pigments and hydrazone derivative type charge carrier-transfer agents for)

IT 93754-45-1 97008-60-1 97816-78-9 97931-70-9

98058-50-5

RL: USES (Uses)

(electrophotog. charge-carrier-generating pigment)

IT 87866-72-6 87866-84-0 87866-88-4 87866-90-8 92827-92-4
98058-51-6 98058-52-7
RL: USES (Uses)
(electrophotog. charge-carrier-transfer agent)

IT 88066-48-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and diazotization of)

IT 15538-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reduction of)

IT 88701-07-9P
RL: PREP (Preparation)
(preparation of, as electrophotog. charge-carrier-generating pigment)

IT 109-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrofluorenone)

IT 92-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hexafluorophosphate of diazotized diaminodicyanomethylidenefluorene dihydrochloride)

IT 31551-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with malononitrile)

L154 ANSWER 59 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1985:513327 CAPLUS
DOCUMENT NUMBER: 103:113327
TITLE: Electrophotographic photosensitive materials
PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese.
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102633	A2	19850606	JP 1983-210629	19831109
JP 03047497	B4	19910719		

PRIORITY APPLN. INFO.: JP 1983-210629 19831109

GI For diagram(s), see printed CA Issue.

AB Composite electrophotog. photosensitive materials contain charge-carrier-generating bisazo compound I (R = II, III, IV, V; A = aromatic carbocyclic or heterocyclic ring; R' = H, OH, CO₂R₅, SO₃H, carbamoyl, sulfamoyl; R₂ = H, alkyl, amino, carbamoyl, CO₂R₅, CN; R₃ = aryl; R₄ = alkyl, aralkyl, aryl; R₅ = organic moiety) and amine \leq 20 mol/mol-I. The electrophotog. materials show good sensitivity and durability. Thus, an Al-laminated polyester film support was coated with a composition containing I

(R = VI) (2g) and HOCH₂CH₂NH₂ (1.5 mol), and coated with a composition containing 3-(p-methoxystyryl)-9-(p-methoxyphenyl) carbazole and a polycarbonate resin

to give an electrophotog. plate which showed good sensitivity toward W lamp and a **semiconductor** laser (780 nm).

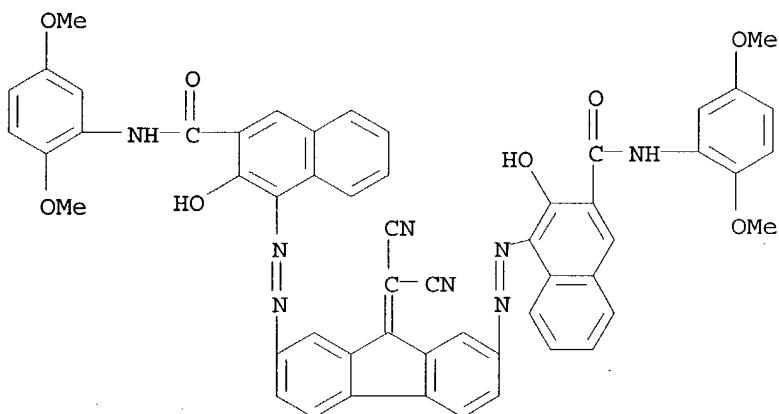
IT 97931-70-9

RL: USES (Uses)

(electrophotog. charge-carrier-generating pigment)

RN 97931-70-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4'-[[9- (dicyanomethylene)-9H-fluorene-2,7-diyl]bis(azo)]bis[N- (2,5-dimethoxyphenyl)-3-hydroxy- (9CI) (CA INDEX NAME)



IC ICM G03G005-04

ICS G03G005-09; H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog charge generating bisazo pigment; amine electrophotog sensitizer

IT Photography, electro-, sensitizers

(amines as, for composite photoconductors containing bisazodicyanomethylenefluorene pigments)

IT Photography, electro-, photoconductors

(composite, charge-carrier-generating bisazo pigments for)

IT 88701-08-0 93754-52-0 97931-70-9

RL: USES (Uses)

(electrophotog. charge-carrier-generating pigment)

IT 1159-53-1 41578-12-5 57609-72-0 84746-59-8

RL: USES (Uses)

(electrophotog. charge-carrier-transfer agent)

IT 102-71-6, properties 107-15-3, properties 109-89-7, properties 110-89-4, uses and miscellaneous 141-43-5, properties

RL: PRP (Properties)

(electrophotog. sensitizer)

IT 88066-48-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and diazotization of)

IT 15538-90-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reduction of)

IT 88701-07-9P
 RL: PREP (Preparation)
 (preparation of, as electrophotog. charge-carrier-generating pigment)

IT 109-77-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with dinitrofluorenone)

IT 92-77-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with hexafluorophosphate salt of diazotized
 dianinodicyanomethylidenefluorene bis(hydrochloride))

IT 31551-45-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with malononitrile)

L154 ANSWER 60 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:496343 CAPLUS
 DOCUMENT NUMBER: 103:96343
 TITLE: Electrophotographic photosensitive materials
 PATENT ASSIGNEE(S): Konishiroku Photo Industry Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60102634	A2	19850606	JP 1983-210622	19831109
JP 03000624	B4	19910108		
US 4599287	A	19860708	US 1984-669696	19841107
EP 144791	A2	19850619	EP 1984-113489	19841108
EP 144791	A3	19860205		
EP 144791	B1	19920115		
R: DE, FR, GB				
PRIORITY APPLN. INFO.:			JP 1983-210622	19831109
			JP 1983-210623	19831109
			JP 1984-108226	19840528
			JP 1984-108228	19840528

OTHER SOURCE(S): CASREACT 103:96343

GI For diagram(s), see printed CA Issue.

AB Composite electrophotog. photosensitive materials contain a bisazo compound I (R = II, III, IV, V; A = aromatic carbocycle or heterocycle; R1 = H, OH, CO2R5, SO3H, carbamoyl, sulfamoyl; R2 = H, alkyl, amino, carbamoyl, CO2R5, CN; R3 = aryl; R4 = alkyl, aralkyl, aryl; R5 = organic moiety) in the charge-carrier-generating phase and a styrene derivative VI (R6, R7 = alkyl, Ph; R8 = Ph, naphthyl, anthryl, fluorenyl, heterocycl; R9-R12 = H, halo, alkyl, alkoxy, alkylamino; R6 and R7 may be substituted with alkyl, alkoxy, or Ph; R8 may be substituted with alkyl, alkoxy, halo, OH, or Ph) in the charge-carrier-transfer phase. The electrophotog. materials show high sensitivity (especially toward **semiconductor** lasers) and good durability. Thus, an Al laminated polyester film support was coated with I (R = VII) and poly(vinyl butyral), and coated with a composition containing

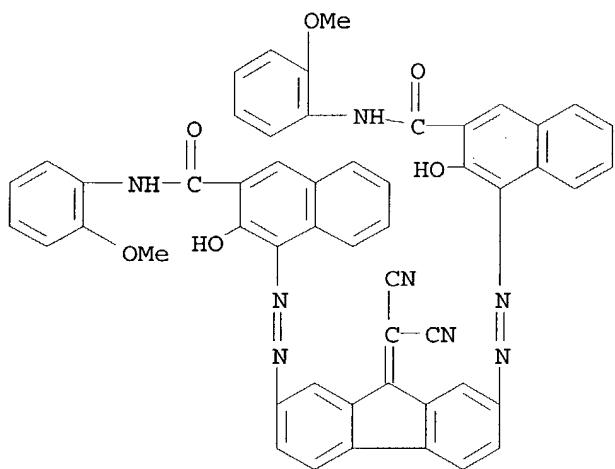
(R6 = 4-MeOC₆H₄; R7 = R8 = Ph; R9-R12 = H) and a polycarbonate resin to give an electrophotog. plate having excellent sensitivity towards W lamp and a **semiconductor** laser (780 nm).

IT 93754-45-1 97816-78-9

RL: USES (Uses)
(electrophotog. charge-carrier-generating pigment)

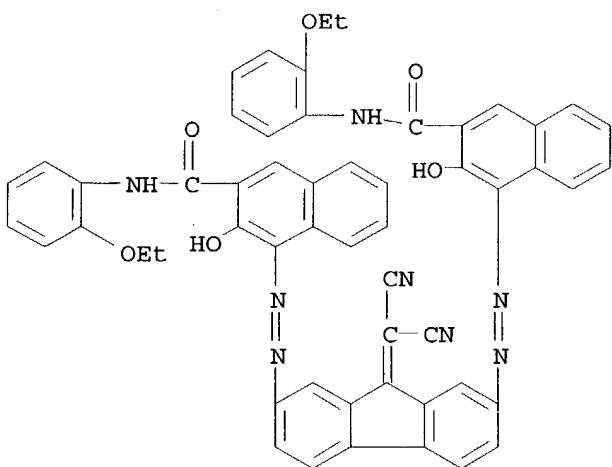
RN 93754-45-1 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4' - [[9- (dicyanomethylene) -9H-fluorene-2,7-diyl]bis(azo)]bis[3-hydroxy-N- (2-methoxyphenyl) - (9CI) (CA INDEX NAME)



RN 97816-78-9 CAPLUS

CN 2-Naphthalenecarboxamide, 4,4' - [[9- (dicyanomethylene) -9H-fluorene-2,7-diyl]bis(azo)]bis[N- (2-ethoxyphenyl) -3-hydroxy- (9CI) (CA INDEX NAME)



IC ICM G03G005-04

ICS H01L031-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST electrophotog charge generating bisazo pigment; aminostyrene electrophotog

charge transfer agent; styrene
IT Photography, electro-, photoconductors
(composite, charge-carrier-generating bisazo pigments and
charge-carrier-transporting styryl compds. for)
IT 88701-08-0 88701-09-1 93754-45-1 93754-52-0
97816-78-9
RL: USES (Uses)
(electrophotog. charge-carrier-generating pigment)
IT 7378-54-3 79580-07-7 89114-74-9 89114-76-1 89114-77-2 89115-01-5
91274-12-3
RL: USES (Uses)
(electrophotog. charge-carrier-transfer agent)
IT 107-15-3, properties 109-73-9, properties 141-43-5, properties
RL: PRP (Properties)
(electrophotog. charge-carrier-transfer layer containing styryl compound
and)
IT 15538-90-6P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(prepare and reduction of)
IT 88066-48-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and diazotization of)
IT 88701-07-9P
RL: PREP (Preparation)
(preparation of, as electrophotog. charge-carrier-generating pigment)
IT 109-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with dinitrofluorenone)
IT 92-77-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hexafluorophosphate salt of diazotized
diaminodicyanomethylidenefluorene bis(hydrochloride))
IT 31551-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with malononitrile)

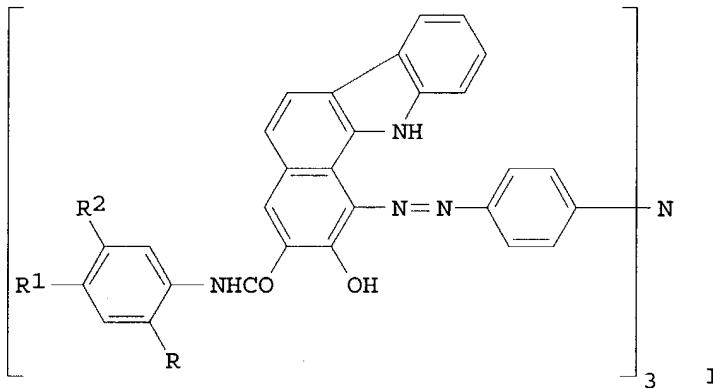
L154 ANSWER 61 OF 62 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:91041 CAPLUS
DOCUMENT NUMBER: 98:91041
TITLE: Trisazo benzocarbazole compounds for
electrophotography
INVENTOR(S): Ohta, Masafumi
PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
SOURCE: Ger. Offen., 48 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 3219765	A1	19821223	DE 1982-3219765	19820526
DE 3219765	C2	19840308		

JP 57195767	A2	19821201	JP 1981-80151	19810528
JP 01002146	B4	19890113		
JP 57195768	A2	19821201	JP 1981-80161	19810528
JP 02004624	B4	19900129		
JP 57203061	A2	19821213	JP 1981-88102	19810610
JP 01058180	B4	19891211		
JP 57203062	A2	19821213	JP 1981-88111	19810610
JP 01058181	B4	19891211		
JP 57206658	A2	19821218	JP 1981-90611	19810612
JP 01058182	B4	19891211		
JP 58122967	A2	19830721	JP 1982-5682	19820118
JP 03056263	B4	19910827		
US 4507471	A	19850326	US 1982-379688	19820519
FR 2506776	A1	19821203	FR 1982-9435	19820528
FR 2506776	B1	19861226		
GB 2100743	A1	19830106	GB 1982-15763	19820528
GB 2100743	B2	19850515		
PRIORITY APPLN. INFO.:				
		JP 1981-80151	19810528	
		JP 1981-80161	19810528	
		JP 1981-88102	19810610	
		JP 1981-88111	19810610	
		JP 1981-90611	19810612	
		JP 1982-5682	19820118	

GI



AB The preparation and properties of black crystalline compds. of general structure I

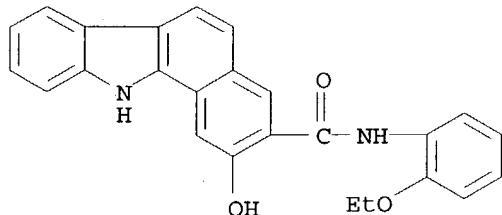
are described, where R = H, Me, Et, or EtO, R1 = H, Me, or Et, and R2 = H, Me, or Cl. I are useful as charge carrier-forming pigments in multilayer electrophotog. plates. Thus, (4-H2NC6H4)3N [5981-09-9] was treated with aqueous HCl-NaNO2 to give the corresponding hexazonium trifluoroborate [69474-93-7], which was coupled with 2-hydroxy-3-(phenylcarbamoyl)benzo[a]carbazole [84809-05-2] in DMF-H2O to form crystalline I (R = R1 = R2 = H) [84809-13-2]. Eight other I were similarly prepared, and IR and x-ray diffraction spectra for each compound are shown. Electrophotog. plates containing I exhibited sensitivity in the **semiconductor** laser wavelength region that was >10 times greater than that of plates containing several known charge carrier-forming compds.

IT 84809-09-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling of, with hexazotized tris(aminophenyl)amine)

RN 84809-09-6 CAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide, N-(2-ethoxyphenyl)-2-hydroxy- (9CI)
(CA INDEX NAME)



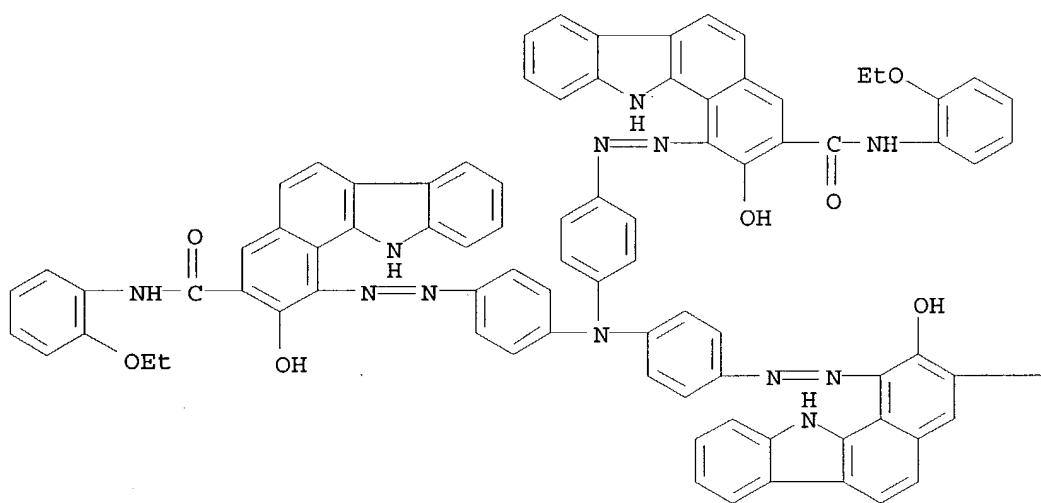
IT 84809-03-0P

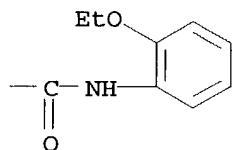
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation, spectra and charge carrier-generating properties of, for
electrophotog.)

RN 84809-03-0 CAPLUS

CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1',1'''-[nitrilotris(4,1-
phenyleneazo)]tris[N-(2-ethoxyphenyl)-2-hydroxy- (9CI) (CA INDEX NAME)

PAGE 1-A

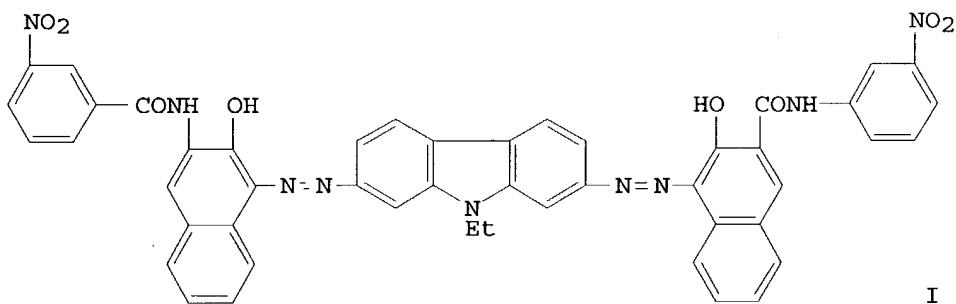




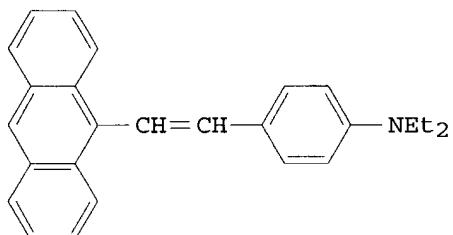
IC C09B035-378; C07D209-88; G03G005-06
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 74
ST trisazo compd electrophotog synthesis; azo compd electrophotog synthesis; carbazole trisazo compd synthesis; benzocarbazole trisazo compd synthesis; phenylcarbamoylbenzocarbazole azo compd; triphenylamine trisazo compd synthesis; electrophotog charger carrier former
IT Photography, electro-, photoconductors
(composite, charge carrier-generating agents for, trisazo compds. as)
IT Photography, electro-, plates
(composite, charge carrier-generating trisazo pigments for)
IT Azo compounds
RL: USES (Uses)
(tris-, manufacture of, as charge carrier-generating agents for composite electrophotog. plates)
IT 5981-09-9
RL: USES (Uses)
(coupling of hexazotized, with benzocarbazole derivs.)
IT 84809-05-2 84809-06-3 84809-07-4 84809-08-5 **84809-09-6**
84809-10-9 84809-11-0 84809-12-1 84814-54-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling of, with hexazotized tris(aminophenyl)amine)
IT 69474-93-7P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and coupling of, with benzocarbazole derivative)
IT 84809-00-7P 84809-01-8P 84809-02-9P **84809-03-0P**
84809-04-1P 84809-13-2P 84814-51-7P 84814-52-8P 84814-53-9P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation, spectra and charge carrier-generating properties of, for electrophotog.)

TITLE: Multilayer electrophotographic plates
 INVENTOR(S): Yasumori, Akiyoshi; Kato, Tatsuya; Enomoto, Takamichi
 PATENT ASSIGNEE(S): Ricoh Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54080750	A2	19790627	JP 1977-148967	19771212
JP 63018183	B4	19880418		
PRIORITY APPLN. INFO.:			JP 1977-148967	19771212
GI				



I



II

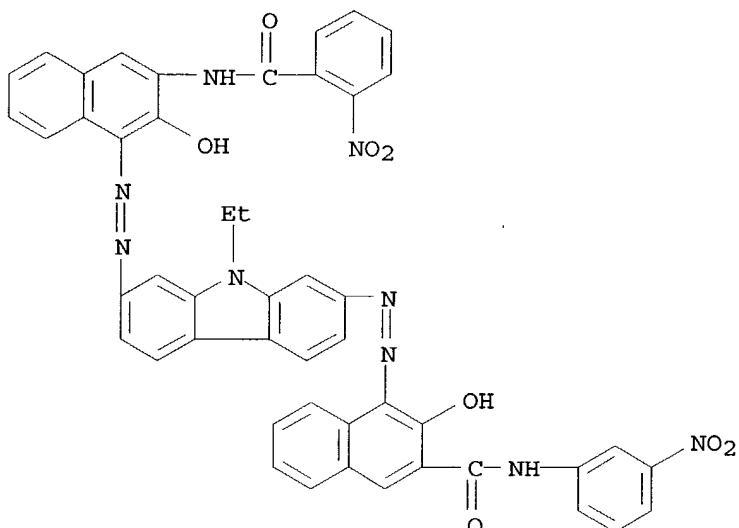
AB In preparing multilayer electrophotog. plates having an organic charge-generating pigment-containing layer and a charge-transfer layer, an inorg. n-type **semiconductor** is dispersed in the charge-generating layer to improve sensitivity and to reduce the residual charge. The electrophotog. plates also have improved service life. Thus, a polyester 0.1, the pigment I 0.1, and THF 15 g were ball-milled, then ZnO 0.015 g was added to the dispersion, and the dispersion was coated on an Al-laminated polyester support. Subsequently, a composition containing II 5 and a polycarbonate resin 5 g was coated on the pigment-containing layer to give an electrophotog. plate whose saturation voltage, initial voltage, E1/2 sensitivity, and residual charge were 820, 510 V, 3.2 lx-s, and 0 V, resp., vs. 1100, 750 V, 4.3 lx-s, and 20 V, resp., for a ZnO-free control.

IT 71836-13-0

RL: DEV (Device component use); USES (Uses)
(multilayer electrophotog. plate containing)

RN 71836-13-0 CAPPLUS

CN 2-Naphthalenecarboxamide, 4-[[9-ethyl-7-[[2-hydroxy-3-[(2-nitrobenzoyl)amino]-1-naphthalenyl]azo]-9H-carbazol-2-yl]azo]-3-hydroxy-N-(3-nitrophenyl)- (9CI) (CA INDEX NAME)



IC G03G005-04

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

ST electrophotog plate multilayer

IT Photography, electro-, plates
(multilayer, sensitization of, by zinc oxide)

IT 1314-13-2, uses and miscellaneous 71530-63-7 71836-13-0

RL: DEV (Device component use); USES (Uses)
(multilayer electrophotog. plate containing)

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